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ABSTRACT

A review and assessment of states' reform actions, measurement techniques, and the relevance of the reforms for New York State are addressed in this collection of papers from a working seminar on the purpose of schooling and the means of producing higher levels of achievement. The first paper, "Education Reform in the State: A Comparative View and Identification of the Issues," by Frances Kemmerer and Alan Wagner, presents an overview of state education reform actions, with a focus on financing. A discussion of proposals that tend to be favored by states concludes that low cost and high visibility actions are not likely to fulfill expectations. An appendix outlines state educational reform initiatives alphabetically by state and a list of references is included. "The Role of Testing in American School Reform," by Edward Kelly, discusses limitations of testing in school reform and offers alternative measurement techniques. Forty-one end notes are appended. "A History of School Reform in New York State: Implications for Today's Policy Makers," by Gail Kelly and Maxine Seller, identifies characteristics of successful reform initiatives, which include clearly defined goals, strong leadership, and adequate financing. A list of 48 end notes concludes the paper. A preface by Robert H. Koff introduces the papers and briefly summarizes the seminar discussion, noting that participants identified conflict between professional autonomy and state mandates as the primary barrier to reform and suggested specific areas in which changes must be made if improvements in New York's schools are to be realized. (LMI)

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The School of Education
State University of New York at Albany
and
The Nelson A. Rockefeller Institute of Government
State University of New York

Proceedings of the New York Education Policy Seminar

NATIONAL EDUCATION REFORM AND NEW YORK STATE: A REPORT CARD

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NATIONAL EDUCATION REFORM AND NEW YORK STATE: A REPORT CARD

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February 1985
Albany, New York

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Preface

Since A Nation At Risk and nine or so other national reports on the condition of education were released some two years ago, a new debate about the purpose of schooling and the means of producing higher levels of achievement has emerged at the federal, state, and local levels. In New York State, the School of Education at State University of New York at Albany and the Rockefeller Institute have convened two meetings on Educational Reform and New York State. This volume includes the papers presented and discussed at the most recent working seminar held on February 4, 1985.[1]

The objectives of the seminar were to: (a) review the reform actions taken by states in the past year; (b) assess the relevance of reforms undertaken in other states for New York schools; and (c) discuss means of measuring reform actions and their effects on New York.

The keynote address was given by Governor Lamar Alexander of Tennessee. The Governor reviewed the problems facing schools in his state and the steps that were being taken to address them. Governor Alexander's remarks were followed by a summary and discussion of the three commissioned background papers.

The first paper, "Education Reform in the States," by Professors Frances Kemmerer and Alan Wagner, provides an overview of state educational reform actions, including the financing of new initiatives. It raises questions on two fronts. First, which reform proposals tend to be favored by the states (and which ones ignored) and why? Second, what are the likely effects on achievement and equity of the actions the states have taken. The paper concludes that the low cost, high visibility actions taken by many states are not likely to fulfill the expectations generated by the debate. The actions may therefore have the unintended effect of further disillusioning the public about schools and the abilities of states to reform public agencies.

Most reform proposals called for greater testing of students and teachers. Professor Edward Kelly's paper, "Testing in American School Reform," warns against the confusion of testing and evaluation. On the one hand, the paper takes issue with the confidence generally placed in tests, whether professionally or nonprofessionally constructed. On the other hand, it offers alternatives to the types of tests currently relied on and suggests mechanisms for supplying assistance to classroom teachers in evaluating students.

Professors Gail Kelly and Maxine Seller, in their paper "History of School Reform in New York State," identify certain shared characteristics of "successful" reform movements in the state. They argue that well defined and narrowly specified goals, strong leadership, and adequate financing are all necessary if not

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[1]The first working seminar was held in the fall of 1983. The background papers by Professors Kemmerer, Vogt, and Wagner were published by the Rockefeller Institute in Challenge from Without: Analysis of the Recommendations Advanced by Five National Education Task Forces and Their Policy Implications for Precollege and Higher Education, as part of its Special Report Series in the spring of 1984.

sufficient conditions for real change. Broadly defined goals or changes in school laws and regulations unaccompanied by other resources may have the unintended effects of undermining preexisting programs and benefiting some students while not others.

The papers and the participant discussion revealed widespread agreement about many of the problems and issues surrounding efforts to improve student performance. All identified the conflict between state mandates and the professional autonomy of teachers and administrators as an overriding barrier to achieving real improvement in the schools. What is called for is a "balance" between accountability and local flexibility. While participants disagreed on where the balance should be struck, it was agreed that, at a minimum, teachers should be more directly involved in both the formulation and implementation of changes intended to improve school outcomes.

The seminar closed with the suggestion that a mechanism be established for monitoring the effects of reform efforts in New York. It was proposed that interested groups assume responsibility for the collection of state-wide data on changes of interest to their constituencies. Thus, teacher organizations might monitor increases in teacher salaries, parent groups report changes in the level and type of parental involvement in school activities, the State Education Department provide information on financing patterns, and schools of education follow trends in preservice and inservice training. The information collected on a number of indicators could be assembled and presented at future Rockefeller Institute working seminars. These reports, in turn, would serve as a point of departure for discussions about how schools are doing and what remains to be done.

Although a comprehensive list of indicators, like that proposed in California, has not been developed, the comments of participants suggested specific areas in which changes must be observed if improvements in New York's schools are to be realized. Some of the possible indicators are listed below. Not all indicators of reform represent outcomes. Many, and perhaps the most important, serve as signs of improvement in the conditions and processes of schooling. All positive changes, however, would provide evidence that the effort and resources allocated to reform were, in fact, having the desired results.

Teachers:

1. Increase in the allocation of personnel and other resources to teacher education programs within schools of education;

2. Increases in the quantity and change in the substance of inservice staff development programs;

3. Increases in salaries for all levels of experience, education, and performance;

4. Increases in expenditures for instruction;

5. Attainment of an acceptable level of staff turnover (below that which leads to instability but high enough to allow for an infusion of new staff, new ideas, and new techniques);

6. Reduction in teacher absenteeism;

7. Establishment of a mechanism for mentor or master teachers;

8. Reduction of non-teaching responsibilities;

9. Establishment of mechanisms for teacher participation in state, district, and local policy decisions affecting the conditions and processes of schooling.

Students:

1. Improvement in some measure of student performance;

2. Increase in college-going rates and in the proportion of secondary school students sitting for college entrance examinations;

3. Increases in proportion of graduates receiving the Regents' diploma;

4. Improved retention of students;

5. Reduction in student absenteeism;

6. Increases in the quality and quantity of homework;

7. Increases in the time available for learning in the classroom.

Curriculum:

1. Changes in curriculum, texts, and materials to emphasize higher order cognitive skills;

2. Establishment of test and evaluation centers.

Parent/Community:

1. Establishment of parent education programs to foster understanding of test results, classroom curricular goals, and ways of helping the student in school work;

2. Increases in the quantity and type of parental involvement in the educational process;

3. Establishment of working relationships between the school, local business groups, higher education institutions and others interested in education.

In closing, the School of Education and the authors wish to express their appreciation for the support given to this project by the Nelson A. Rockefeller Institute of Government. In particular, without the generous and thoughtful assistance of the Institute Director, Professor Warren Ilchman, the working seminars could not have been held or the proceedings published.

We invite and welcome reader comments.

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March, 1985

A Report Card: Education Reform in the States

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Abstract

The recent major national reports on the condition of education have indicated that the problems with schools may be summarized as (1) too little press for academic achievement and (2) inadequately trained, motivated, and paid personnel. To a greater or lesser extent, the states have responded to problems by upgrading curricular requirements for graduation from high schools, funding grant or loan programs for teacher education, emphasizing greater testing of both students and teachers, and examining (if not altering) pay scales and career opportunities for school personnel.

This paper reviews state educational reform actions, including the financing of the new initiatives, and raises questions on two fronts. First, which proposals tend to be favored by states (and which ones have been largely ignored) and why? Second, what are the likely effects on achievement and equity of the actions the states have taken?

Generally, the states have concentrated on low cost, high visibility activities. A relatively large number of states have adopted new curriculum guidelines, raised teacher certification standards, and established special grant and loan programs for teacher education. Initiatives receiving limited or no state support include proposals to promote parental involvement in the schools, to expand local school development activities, to improve teacher training programs, to keep more talented individuals in teaching, and to find new ways to meet the needs of students less interested or gifted in academics than average. Importantly, these latter initiatives tend to be ones likely to produce significant improvements in student performance.

With respect to financing, state commitments to reforms have been modest (with some notable exceptions). In some states, reform is being purchased at the expense of greater equalization since reform dollars tend to be distributed on a flat grant basis or used for programs for the most successful (not necessarily most improved) students. Moreover, school revenues are increasingly being financed through regressive tax sources.

Neither the types of actions taken nor the level of effort reflected in their financing are likely to have the high payoffs promised to, and expected by, the public at large. As a result, the very real (if modest) benefits of the reforms put in place may be outweighed by unintended negative effects, such as a loss in equity, a growing disaffection among teachers and school administrators who find their efforts more constrained by new prescriptive guidelines, and increased local disenchantment with schools which are unable to deliver on the mandates due to inadequate levels of funding. This disaffection and disenchantment may well reach state capitals, as a public now sensitive to school quality issues looks to governors and state legislatures for leadership and results.

Introduction

> . . . the educational foundations of our society are presently eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people.
>
> National Commission on Excellence in Education, p. 5.

While many disagree with the conclusion if not the assessment of schools cited above, there is a growing consensus that: (a) school learning can be made more rigorous and exciting; and (b) good teaching should be rewarded. Schools ought to be places where the interests and abilities of both teachers and students are engaged and developed.

Where schools currently fall short of this objective, nine or so recent, major national reports pinpoint the problems as: too few resources; too little curricular focus (particularly on math, science, computer literacy, and foreign languages); too little press for achievement; and inadequately trained, motivated, and paid teachers and administrators. To overcome the problems, the reports recommend a variety of "sticks and carrots." The "sticks" include mandatory syllabi, testing of teachers and students, and more minutes, days, and years of schooling. The "carrots" range from acknowledgments for excellence in teaching, to subsidies for education and training, to merit pay and career ladder schemes.[1]

While much of the rhetoric for reform originated in national forums, states have been expected to shoulder the burden of implementing the specific recommendations, including changing the rules and regulations, administering the sanctions and incentives, and providing the finances. This paper probes the extent to which states have moved to embrace the proposed reform initiatives and offers some general observations about the reasons for state actions and their likely consequences. The review generally covers actions taken (i.e., to actual changes in laws, regulations, and funding patterns) from 1982 through the spring of 1984.

The first section of the paper contains a brief summary and a more extensive evaluation of the nature, extent, and financing of state reform efforts. Details on state initiatives and financing are presented in the second section. A companion Appendix provides a description of the actions taken in individual states.

I. An Evaluation of Reform in the States

Since the call for reform was issued in early 1982, states have moved quickly to review and rationalize their education laws. They have identified and often remedied, in so far as it is in their power to do so, many of the programmatic weaknesses or areas of neglect identified by the national reports. In many states, new ways have been found to assist districts in self-evaluation and reform. And, at least in the last two years, state funding for education in general, and education-reform efforts in particular has increased.

However, the state responses to the call for reform are quite varied, reflecting widely different historical, financial, and political influences referred to by others (Odden, 1984; McLaughlin, 1983; Odden and Van Dougherty, 1982; Van Dougherty, 1983). Eight states have enacted comprehensive educational reform packages, with some states moving dramatically away from their historically low-profile involvement in school programs and funding. Since 1980, nineteen states have raised taxes primarily to support education, and six states have raised taxes specifically to support part or all of a reform package. Together, however, the specific actions taken by the states seem to be too narrowly drawn, inadequately supported, and insensitive to basic support needs of the schools.

The Scope of Educational Reform

The reform efforts undertaken by most states have generally been modest, and involve relatively small additional recurrent costs (at least at the state level). As Table 1 indicates, between the call for reform and the spring of 1984, 22 states increased the number of courses required for high school graduation. Fewer than half that number changed admission requirements for state colleges. Fourteen states introduced enrichment programs, while six created special purpose high schools. Class size was reduced in five states. Instructional time was increased by various mechanisms, including lengthening the school year, in twelve states. Another two states undertook pilot projects in this area. Importantly, only two states took strong initiatives in other areas identified as effective by school effects and cost-effectiveness research. Arkansas initiated and funded a parental involvement program and Alaska has begun an effort (similar to New York's program) to assist districts in assessing their programs and designing and implementing reforms.

The state actions affecting teachers summarized in Table 2 follow the same pattern as those affecting students. Notably, the emphasis in state actions to date is not focused on reform within the school; rather the actions have extended broadly into matters of external regulation. Twenty-two states have initiated or increased funding for programs for teacher training and retraining. Thirteen have introduced entry level or pre-certification examinations, while nineteen have made other changes in certification requirements. Only ten states have undertaken substantive reforms in teacher training curricula and only four and three, respectively, have made attempts to improve career opportunities and salaries, thereby increasing the attractiveness of teaching as a profession. No substantive efforts have been made to address the working conditions of teachers, which are likely to affect teacher productivity as well as the attractiveness of the profession.

Table 1
Summary of State Educational Reform Initiatives
Affecting Students: 1982 to 1984

	Number of States Taking Action*	Actions Taken in New York**
Graduation Requirements	22	(increase)
College Entry Requirements	10	-
Enrichment Programs	14	increase
Specialized High Schools	6	new
Class Size	5	under consideration
Instructional Time	14	under consideration

*State counts include the District of Columbia.
**Actions in New York after the spring of 1984 are shown in parentheses.

SOURCE: See Chart I, and the Appendix.

One of the most obvious explanations for the states' choices among options in the reform agenda is cost: testing of teachers and students, providing student loans to prospective teachers, changing curricular requirements for promotion and graduation, and drawing up new criteria for textbook selection simply do not represent major efforts, or major current or continuing monetary investments.

For governors and state legislators held accountable for the improvement in schools, there are four dangers. First, low cost options may not be at all

effective. For example, we believe that the "forgivable" loan programs introduced in many states will not increase the numbers of highly able students entering teacher education programs and the profession. Simply, the incentives are insufficient, relative to the amounts of financial support available to these students from other sources and relative to the career opportunities they may consider, to add to the numbers who would choose education as a profession without the subsidy (Kemmerer and Wagner, 1985; Wagner, 1984). On the other hand, we believe some high cost options to improve teacher quality, such as extensive inservice education programs or increases in teacher salaries, may turn out to be very cost-effective—a better indication of which options should be adopted.

Table 2
Summary of State Educational Reform Initiatives Affecting Teachers: 1982 to 1984

	Number of States Taking Action*	Actions Taken in New York
Support for Training/Retraining	22	new
Entry Level or Certification Exams	13	increased
Other Changes in Certification Requirements	19	-
Reform of Teacher Training Programs	10	-
Career Ladders	4	-
Merit Pay	3	-

*State counts include the District of Columbia.

SOURCE: See Chart I, and the Appendix.

Second, many of the state initiatives could be counter-productive. While a number of states have implemented programs designed to attract and retain the most highly able in teaching (through teacher pay and "forgivable" loans), other changes such as mandated curriculum guides and narrowly drawn student and teacher evaluation criteria allow less scope for teachers to apply their skills in uniquely productive ways. The result may be, initially, a smaller gain in student performance than might be hoped. Over time, highly talented prospective and existing teachers may turn down even more generous salaries in the profession to avoid the drudgery of routinized, mandated classroom teaching.

Third, the favored initiatives are unlikely to yield short term gains in student performance. The adoption of "forgivable" loans for prospective teachers will hardly affect the measured quality of teachers in the schools over the next five years. Even if the program is successful in attracting the right kinds of students into teaching careers, the numbers entering each year would represent a very small fraction of the pool of teachers. More comprehensive and far ranging inservice programs or general pay raises would be more effective in raising the overall quality of the teaching pool in the short run, but the states are moving relatively slowly in this area—preferring to phase in programs that could be quite costly when fully implemented.

Finally, though the implemented reforms set new standards and expectations for teachers, students, and instructional programs, the new rules and regulations will generally be difficult, if not impossible, to enforce. Nor can it be assumed that what is taught is what students learn. "Learning is not the product of teaching" (Holt, 1984). Good teaching may make complex information accessible and its mastery attractive, but students decide what and how much to learn. Efforts to identify and strengthen student incentives to supply time to learning must also be undertaken. These efforts require the active support of parents, teachers, and local administrators; to date, only one state (Arkansas) has created a mechanism for parent involvement and only a few have followed New York's example of providing resources and expertise for district self-evaluation and change.

Financing Reform in the States

Estimates of the resources required to implement the recommendations envisioned in the national reports range from 20 to 28 percent (Odden, 1984; Wagner, 1984; Howe, 1984). State funding for education is up some fifteen percent in nominal terms since 1982. As shown in Table 3, twelve states raised their support of elementary and secondary education by less than ten percent over a period when increases of seven percent would have been necessary to sustain state support in real terms. Even among the eighteen states increasing state-level funding for education by more than twenty percent, their increases would augment total spending for education by an estimated fifteen percent on average (in current dollars), an amount simply not large enough to fund the full agenda of reforms.

Table 3

Summary of Changes in the Levels of State Support for Elementary and Secondary Education: 1982-83 to 1984-85

Percentage Increase in State Funding	All States*	States Contributing About the Same Share as New York State**
Less than 10 percent	12	3
10 to 20 percent	19	7
More than 20 percent	18	5

*State counts exclude District of Columbia and North Dakota.
**In 1983-84, New York contributed about 41 percent of the amounts received by school districts. States contributing from 36 to 46 percent of school revenues are included for comparison.

SOURCE: See Table 5.

Over the last three years, almost all states have raised taxes or fees on existing revenue sources or expanded the revenue base by levying taxes or fees against goods and services previously untaxed. The level of activity, however, is misleading. First, prompted by a recession and cuts in federal support for programs, states increased revenues to meet growing obligations in income transfer programs and to maintain, rather than increase, state services such as education. Second, a large share of the state tax and fee actions were concentrated on less visible tax handles with low revenue potential.

However, some nineteen states linked increased taxes or fees to education or educational reform needs. As shown in Table 4, of the seventeen states raising general sales tax rates, ten did so to support education. Increases in property and inheritance taxes also were advanced in half a dozen states to support education generally, and school improvement specifically. Since 1980, twelve more states are using tax deductions and credits to increase support for education.

Among all states taking tax actions in support of education, only six linked the increase in rates or fees to educational reform activities. Most states, including such active states as California and Florida, have chosen to finance educational reform initiatives out of resources obtained through sources which are yielding greater revenues due to the states' economic growth. Four states moving

aggressively ahead with educational reform initiatives—Arkansas, Tennessee, South Carolina, and Texas—generated significant additional revenue by tying increases in highly visible sales tax rates to school improvement activities. What is particularly heartening about the latter choices is that state leaders (with the support of the public) opted to raise taxes for education during the depth of the recent recession. But, there are potential dangers from the implicit or explicit earmarking of funds from a particular revenue source. John Augenblick (1984) suggests that the linking of particular revenue sources to reform activities will focus attention on the results (or lack of results) of the initiatives in several years. Moreover, the specific revenue sources used (mostly sales taxes) tend to be more volatile and regressive than the broad, diverse general revenue sources used to support school operating expenses.

Table 4

State Tax and Fee Actions: 1980 to 1984

	Number of States Making Changes Linked to:		
	General Fund Purposes	Education Purposes	Educational Reform Purposes
Total Revenue Actions*	20**	13	6
Income	9**	-	-
Sales			
General	7	6	4
Excise, Special	7	1	2
Property/Inheritance	1	6	-
Other	8	2	2
Tax Incentives	-	1	11

*Totals represent unduplicated counts. Many states initiated changes in tax rates or fees for more than one source.

**Two other states enacted income tax increases which have expired or been repealed.

SOURCE: See Table 6.

Note: The "link" between a revenue source and the uses of the generated revenue is not limited to explicit earmarking arrangements but rather includes any implicit association between the added revenues and purpose as revealed in public accounts of the debates in states enacting the changes. As a result, the review of state actions is not comprehensive; there is no readily available, single source for this information (beyond contacting state budget officials directly).

The "Trade-Off" Between Reform and Equity

The significant run-up in state funding over the last two years masks a potentially important shift in state emphasis away from supporting districts where available school resources are relatively low. State programs for school improvements effectively distribute funds in a manner similar to a flat, categorical grant program, in which set amounts are provided regardless of the current levels of resources available in the school or district. So, although overall increases in the level of state funding generally improve equity in the distribution of resources, the equity effects will be less under the essentially flat grant funding of reform than under equalization formulas (Cohn, 1985). Reform initiatives targeted on programs for the most successful students only exacerbate the shift from equity.

Some states have recognized the implied trade-off. Texas' major Educational Opportunity Act provides additional equalization funding along with nearly $1 billion for educational reform initiatives. State education leaders in Wisconsin delayed implementation of a number of reform proposals in order to ensure adequate amounts of funds were made available through the basic school aid program. In New York, however, the 1984-85 financing plan suggests a further retreat from targeting state funds and efforts on districts which might gain the most. When the reduction in the state minimum guarantee is coupled with minimum "flat grants" to all districts and various "save harmless" provisions, the state's commitment to the least wealthy districts seems to have eroded further. The scattershot of categorical aids in the current plan—staff inservice, computer hardware and software, teacher summer business employment programs, math and science teacher scholarships and fellowships for teachers and potential teachers—offers improvements for all districts while not adequately ensuring that those districts in which student performance is less than might be hoped (and where special efforts might yield the greatest improvements per dollar spent) are adequately supported.

The Prospects for Reform

The general conclusion is that the types and magnitudes of states' efforts adopted over the past two years are not likely, by themselves, to yield significant improvements in measured student outcomes over the next five years. To the extent the reform agenda has promised results quickly, these promises may not be met. But, it is early yet in this reform cycle. If the states can capitalize on and foster the growing parent, student, and community interest and involvement in

educational quality while undertaking a careful evaluation of all reform options, then the enthusiasm and hope that has returned to the schools might well be matched by observable results.

II. An Overview of State Educational Reform Activities

The proposals for reform touch on practices and efforts in five broad areas: (1) teacher preparation and professional development; (2) teacher certification; (3) curriculum; (4) instructional time; and (5) financial support.[2] A detailed outline of reform efforts in these areas in the states is provided in an appendix to the paper. The discussion which follows attempts to summarize the most salient features of the actions reported there. It is divided into three parts: (a) teacher preparation, development and certification; (b) curriculum and instruction; and (c) financing.

Teacher Preparation, Development, and Certification

> Persons preparing to teach should be required to meet high education standards, to demonstrate an aptitude for teaching and to demonstrate competence in an academic discipline . . . . Salaries for the teaching profession should be increased . . . market sensitive . . . performance based.
>
> National Commission on Excellence in Education, p. 30.

Who should be recruited to teach? How might they be attracted into the profession? What is the most appropriate preparation? What should be the basis for certification? The Commission's statement highlights the specific areas in which states might take actions to respond to these questions in their efforts to improve the quality of teaching and teachers. States can undertake initiatives to (1) improve teacher preparation and professional development; and (2) impose more rigid and ongoing certification procedures. As documented in Chart I, the states which have acted in these areas have chosen similar solutions.

Teacher preparation and professional development. The largest response by far, in terms of the number of states actually implementing programs, has been in attempts to overcome teacher shortages in math and science. Twenty-two states reported that they had either strengthened or created new inservice programs and/or scholarship/loan programs for teacher education in these content areas.

The loan programs generally provide support for training or retraining. If they teach in public schools within the state for a specified number of years after graduation, students participating in the loan programs will be "forgiven" all or part of the loan principal. Georgia made "forgiveness" contingent on teaching in a geographic area of the state experiencing difficulty in recruiting math and science teachers. Vermont's response to the distributional problem has been to set up a placement service to assist districts with shortages in identifying potential teachers.

The emphasis in both the inservice and student aid initiatives is clearly on dealing with spot shortages rather than recruiting more academically talented individuals into the profession or upgrading the general skills of teachers. Only one state is actively recruiting talent in a more general sense. Utah's new scholarship program is designed to recruit and train superior students for teaching in public schools.

Ten states have addressed the problem of teacher preparation generally by strengthening the requirements for admission to approved education programs and redesigning program content. The states implementing these changes have placed more emphasis on subject matter in the area of certification and reduced emphasis on general education coursework. In addition, prospective teachers will face more demanding and lengthy internship requirements in seven states. The changes in curriculum and pre-service requirements apparently have not been accompanied by greater appropriations for traditional training programs—a fact difficult to reconcile with much of the rhetoric.

Finally, sixteen states have provided additional funding specifically to be used for across the board increases in teachers' salaries.[3] The general raises, averaging about fifteen percent in the states in which they have been implemented, presumably will make the teaching profession more attractive to talented prospective and former teachers who might otherwise opt for careers outside of teaching.

Teacher certification. A growing number of states—13 more since 1982—now embrace testing, either as part of an approved education program, for initial licensing, or for full certification. More often than not, the new examinations test subject matter competence as well as basic skills. In addition to test scores, new

CHART I

STATE BY STATE CHANGES IN TEACHER PREPARATION, CERTIFICATION AND DEVELOPMENT OPPORTUNITIES

STATE	SUPPORT FOR TRAINING OR RETRAINING	CHANGES IN TEACHER TRAINING PROGRAMS	ENTRY LEVEL OR CERTIFICATION EXAMINATIONS	OTHER CHANGES IN CERTIFICATION REQUIREMENTS	CAREER LADDERS	MERIT PAY
New York*	(x)		(x)			
Alabama	x		x			
Alaska						
Arizona						
Arkansas	x		x			
California	x			x	x	x
Colorado						
Connecticut	x	x				
Delaware	x		x			
District of Columbia			x			
Florida	x			x		x
Georgia	x					
Hawaii						x
Idaho				x	x	
Illinois	x					
Indiana	x		x			
Iowa	x	x				
Kansas			x			
Kentucky	x		x	x		
Louisiana						
Maine				x		
Maryland						
Massachusetts		x		x		
Michigan						
Minnesota						

CHART I (concluded)

STATE	SUPPORT FOR TRAINING OR RETRAINING	CHANGES IN TEACHER TRAINING PROGRAMS	ENTRY LEVEL OR CERTIFICATION EXAMINATIONS	OTHER CHANGES IN CERTIFICATION REQUIREMENTS	CAREER LADDERS	MERIT PAY
New York*	(x)		(x)			
Mississippi	x					
Missouri		x		x		
Montana				x		
Nebraska	x					
Nevada						
New Hampshire						
New Jersey	x	x		x		
New Mexico			x	x		
North Carolina	x			x		
North Dakota	x			x		
Ohio						
Oklahoma		x		x		
Oregon			x			
Pennsylvania	x					
Rhode Island				x		
South Carolina	x					
South Dakota				x		
Tennessee		x	x	x	x	
Texas			x			
Utah	x				x	
Vermont	x	x		x		
Virginia		x	x	x		
Washington	x					
West Virginia		x				
Wisconsin						
Wyoming	x					

*Actions taken in New York since the Spring of 1984 are shown in parentheses.

teachers in seven states will now be required to submit favorable evaluation reports prior to a tenure decision. The average probationary period is two years. A handful of states have withdrawn permanent certification in favor of periodic renewal dependent on both peer evaluations and further study or testing.

Several states have also moved to ensure greater flexibility in securing qualified teachers. Schools may be permitted to hire "adjunct" teachers (through separate licensing procedures) as well as individuals who now can obtain certification even though they have no training in education but are otherwise qualified to teach.

Curriculum and Instruction

> We recommend that state and local high school graduation requirements be strengthened . . . colleges and universities raise their admission requirements . . . schools, colleges and universities adopt more rigorous and measurable standards . . . significantly more time be devoted to learning.
>
> National Commission on Excellence in Education, pp. 24-29.

Many of the questions raised by the reports with respect to teachers found echoes in the concern for curriculum. What should be taught? To whom? In what setting? For how many minutes a day, days a year, and compulsory years? States have rapidly moved to impose or increase minimum standards in this area. State-by-state responses are noted in Chart II.

Curriculum. Between 1982 and the spring of 1984, twenty-nine states changed their requirements for graduation from high school. Whether or not the total number of credit units were increased, electives have been replaced with required courses. Typically, the new requirements are in the form of additional units in English, math, science, and (to a lesser extent) foreign language. Of the states who did not raise their high school exit requirements during this period, many had either just done so (the District of Columbia, for instance) or are planning to do so in the near future. While college entry requirements were not as popular a target for state reformers, ten states reported increased admission requirements. Again, units of math and science are the most common additions.

Instruction. Attempts to reform curriculum, however, go far beyond these graduation and entrance requirements. In nine states, syllabi for K-12 curriculum

have been rewritten with objectives, concepts, methodologies for teaching and testing, and specific student assignments spelled out in great detail. The states implementing these reforms are about evenly split between states that require the use of these syllabi and states which intend the syllabi to serve as guides.

Enrichment programs, particularly in math and the sciences, are growing in number. The programs tend to be offered in the summer and depend, partly, on state funding. For example, in an attempt to stimulate greater participation in enrichment activities during the school year, Iowa is providing monetary incentives for enrollment in advanced placement math and science classes. While the state funds will be offered to districts rather than students, Iowa's program also provides first year tuition grants at the state's postsecondary institutions for students who meet certain curricular requirements. Some states have recently begun to offer special recognition to students who have completed what they consider a rigorous academic program in high school, awarding something akin to the Regents' diploma.

Another way to provide an enriched academic environment is through the creation of magnet schools. While four out of five new magnet schools are organized around a particular curricular emphasis (often technology or the arts) and designed to attract gifted children, New Mexico's specialized schools serve the needs of students who do not choose to attend a regular high school. Many of the new magnet schools in New Mexico are state funded.

At the primary level, most state initiatives have focused on reducing class size, particularly in the early grades. Five states have implemented specific programs in this area. Indiana, for example, has authorized payment to school districts of $18,000 for each additional teacher required to drive class size down to the state-established maximum. Other states are targeting increased resources on primary grades through the provision of more remediation.

Another effort directed at improving young children's chances for success in schooling is seen in the move, particularly in the south, to make kindergarten mandatory. More generally, actions to extend instructional time also include: raising the school leaving age (Arkansas), mandatory time allotments for each subject, lengthening the school day, greater enforcement of the school year minimum, and pilot tests of round the year classes, longer school days, etc.

CHART II

STATE BY STATE CHANGES IN CURRICULUM AND INSTRUCTION

STATE	GRADUATION REQUIREMENTS	COLLEGE ENTRY REQUIREMENTS	ENRICHMENT PROGRAMS	SPECIALIZED HIGH SCHOOLS	CLASS SIZE	INSTRUCTIONAL TIME
New York*	(x)		(x)			
Alabama			pilot program			x
Alaska						
Arizona	x	x				
Arkansas	x				x	x
California	x		x	x		x
Colorado						
Connecticut	x					
Delaware	x					
District of Columbia						
Florida	x	x				
Georgia	x			x		
Hawaii						
Idaho	x					
Illinois	x		x			
Indiana	x		x		x	x
Iowa						
Kansas						
Kentucky	x		x		x	x
Louisiana	x			x		x
Maine			x			
Maryland			x			
Massachusetts		x				
Michigan						
Minnesota						
Mississippi			x		x	x

CHART II (concluded)

STATE	GRADUATION REQUIREMENTS	COLLEGE ENTRY REQUIREMENTS	ENRICHMENT PROGRAMS	SPECIALIZED HIGH SCHOOLS	CLASS SIZE	INSTRUCTIONAL TIME
New York*	(x)		(x)			
Missouri	x	x				
Montana						
Nebraska		x	x			
Nevada	x					
New Hampshire						
New Jersey			x			x
New Mexico	x			x		
North Carolina	x	x				pilot program
North Dakota	x					x
Ohio	x				x	
Oklahoma						pilot program
Oregon	x	x				
Pennsylvania	x		x	x		
Rhode Island	x					
South Carolina						
South Dakota	x	x				
Tennessee	x					
Texas	x		pilot program			x
Utah	x					
Vermont	x		x			
Virginia	x			x		
Washington	x	x				x
West Virginia		x	x			
Wisconsin	x					x
Wyoming						

*Actions taken in New York since the Spring of 1984 are enclosed in parentheses.

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California's approach is somewhat unique. Rather than mandating changes, the state has offered to share the costs incurred by school districts that choose to increase the school day by up to a full hour or the school year by up to five days beyond the minimum required. The legislature has authorized per pupil payments ranging from $20 to $40 per pupil depending on the size of the increment. Michigan has adopted a similar "incentive" strategy.

Financing

The types of educational reforms envisioned by the major national reports would require some commitment of additional resources.[4] The states have been called upon to provide most of the resources necessary to implement the recommendations. A broad review of educational financing patterns and trends over the recent past, however, offers a mixed picture of the state response. State support for education has generally increased, with some of the increases dedicated to implementing selected parts of the reform agenda. However, significant increases in the financial commitment to education and educational reform appear only in a few states.

Patterns and Levels of State Support. Patterns in overall financing for K-12 education are presented in Table 5. The average expenditure per pupil stood at about $3,000 in 1983-84 (the latest year for which complete, comparable data are available).[5] At $1,962 per pupil, Mississippi spent the lowest average amount, while Alaska's $7,026 per pupil expenditure was the highest. New York ranked third in the nation per pupil expenditures (at $4,845).

These expenditures are financed primarily from state and local sources (the federal share barely reached 10 percent in any state). Overall, states provided some 49 percent of the revenues reported by school districts in 1983-84. The state shares range from 7.1 percent in New Hampshire to 90.7 percent in Hawaii. New York, with state support accounting for 41.3 percent of the funds received by schools in 1983-84, falls below the average but sits in about the middle of all states in a ranking by share of state support.

Table 5
State Support for Elementary and Secondary Education:
1978-79 to 1984-85

	Level of Support, 1983-84			Changes in Support	
	Per Pupil Expenditure	State Share	State Amount (millions)	% Change 1977-78 to 1982-83	% Change 1982-83 to 1984-85
United States	$3,173	49.0%	$62,571	62.0	N/A
New York	4,845	41.3	4,868	42.5	16.7
New England					
Connecticut	4,061	38.2	758	87.5	27.8
Maine	2,829	50.9	296	63.9	17.7
Massachusetts	3,176	41.3	1,227	35.8	19.7
New Hampshire	2,796	7.1	31	20.2	8.8
Rhode Island	3,720	35.8	168	40.7	7.4
Vermont	3,148	33.8	104	90.7	8.9
Middle Atlantic					
Delaware	3,735	67.6	234	42.6	10.0
District of Columbia	4,116	-	-	-	-
Maryland	3,720	35.8	984	27.9	20.9
New Jersey	4,943	39.3	2,109	55.6	19.4
New York	4,845	41.3	4,868	42.5	16.7
Pennsylvania	3,725	45.4	2,965	34.4	13.5
Southeast					
Alabama	2,102	67.3	1,032	14.2	19.3
Arkansas	2,257	54.3	527	69.6	29.5
Florida	3,201	54.5	2,708	73.0	23.6
Georgia	2,309	58.6	1,455	88.6	18.2
Kentucky	2,550	70.9	1,147	61.8	10.8
Louisiana	2,821	59.4	1,250	50.1	9.2
Mississippi	1,962	55.3	506	57.8	5.5
North Carolina	2,460	61.7	1,637	39.9	26.8
South Carolina	2,431	59.3	967	57.7	45.6
Tennessee	2,173	45.9	797	55.0	22.4
Virginia	2,967	43.0	1,222	71.2	21.2
West Virginia	2,587	61.2	626	63.1	22.6
Great Lakes					
Illinois	3,397	37.7	2,423	21.8	6.9
Indiana	2,730	53.6	1,371	65.4	9.5
Michigan	3,498	35.1	2,200	18.6	17.5
Ohio	3,090	43.9	2,540	54.0	20.2
Wisconsin	3,553	37.9	1,033	51.2	9.6

(continued on following page)

Table 5 (continued)
State Support for Elementary and Secondary Education:
1978-79 to 1984-85

	Level of Support, 1983-84			Changes in Support	
	Per Pupil Expenditure	State Share	State Amount (millions)	% Change 1977-78 to 1982-83	% Change 1982-83 to 1984-85
Plains					
Iowa	3,239	41.0	694	38.5	10.5
Kansas	3,361	44.2	623	63.1	19.9
Minnesota	3,376	54.1	1,397	16.3	34.7
Missouri	2,714	39.9	880	65.1	11.6
Nebraska	2,927	28.5	225	92.1	6.1
North Dakota	3,307	56.4	213	77.1	N/A
South Dakota	2,657	26.9	100	205.5	9.0
Rocky Mountain					
Colorado	3,261	42.0	803	59.9	20.9
Idaho	2,219	64.1	300	121.9	33.0
Montana	3,631	45.3	273	39.2	12.8
Utah	1,992	54.7	491	76.5	13.8
Wyoming	4,488	29.6	159	112.8	32.0
Southwest					
Arizona	2,738	52.3	800	54.1	17.8
New Mexico	2,921	77.7	647	106.5	10.7
Oklahoma	3,312	66.7	1,394	100.3	12.0
Texas	2,670	47.7	4,200	75.6	30.0
Far West					
Alaska	7,026	83.1	534	112.4	28.0
California	2,912	67.0	8,600	139.1	23.1
Hawaii	3,982	90.7	576	96.1	15.2
Nevada	2,870	42.4	178	149.5	-4.2
Oregon	3,771	28.8	475	112.7	3.0
Washington	3,106	75.1	1,821	106.3	22.7

SOURCES: John Augenblick and Gordon Van de Water, State Support for Education, 1982-83 (Denver: AVA, Inc., December 1983); Steven P. Gold and Corina L. Eckl, State Budget Actions in 1984 (Denver: National Conference of State Legislators, 1984); National Education Association, Estimates of School Statistics, 83-84 (Washington, D.C.: Author, 1984).

Changes in the amount of state support are shown in the last two columns of Table 5. During a "pre-reform" period (defined as 1977-78 to 1982-83), state support for elementary and secondary education increased by 62 percent. In New York, state support rose by 42.5 percent—an increase that put the state in the bottom quintile of all states. Since state financing arrangements and the levels of state support vary so widely, it would be more appropriate to compare states providing about the same share of school revenues.[6] Within the subset of states providing 36 to 46 percent of school revenues, the increases in state support from 1977-78 to 1982-83 ranged from a small 21.8 percent rise in Illinois to a 149.5 percent increase in Nevada. New York's percentage increase ranks near the bottom third.

During the past two years, a "post-reform" period spanning 1982-83 to 1984-85, most states would have had an opportunity to enact legislation and implement changes to increase funding for education and educational reform. As shown in the last column of Table 5, the changes in state funding range from a 4 percent decline in Nevada to a 45 percent increase in South Carolina. State appropriations for K-12 education in New York increased by 17 percent over the two years, an increase falling in the middle of all states and of the states in the Mid-Atlantic region. Among the subset of states contributing about the same share of elementary and secondary revenues as New York, the state's 1982-83 to 1984-85 increase ranks near the middle (trailing only Connecticut by a substantial amount).

Sources and Amounts of State Funds for Education Reform. The recession and cuts in federal spending during the early 1980s placed severe pressures on state budgets. Over three-fourths of the states reacted to the fiscal pressure by initiating permanent or temporary measures to increase revenues as well as cutting state expenditures. The revenue sources ranged from sales and income taxes to higher fees for vehicle registration and oil and mineral sales. During the recovery of late 1983 to 1985, state revenues rebounded, permitting some of the increases in state spending for education just described. These increases potentially take some of the pressure off of school district budgets, and possibly support reform activities.

Table 6

Sources and Purposes of State Tax and Fee Actions: 1980 to 1984

	Expanded or New Revenue Sources*				
	Income	Sales	Property/ Wealth	Tax Incentive	Other
New York		R(Liq, Cig)			R(Lic. Fees)
New England					
Connecticut	R	R(Liq, Cig) R(Prop Sales)	R(Inher)		R(Bus. Serv.)
Maine		ER(Tobac, Liq) ER(Prop Sales) ER(CATV)		ER(Cred) ER(Fndtn)	
Massachusetts					
New Hampshire					
Rhode Island	R(Temp)				
Vermont				ER(Cred)	
Middle Atlantic					
Delaware					
Maryland				ER(Fndtn)	
New Jersey					
New York		R(Liq, Cig)			R(Lic)
Pennsylvania	R				
Great Lakes					
Illinois	R(Expir)				
Indiana	R			ER(Cred)	ER(Loans to Districts)
Michigan	R				
Ohio	R R(Local, Repeal)	R(Util)			
Wisconsin		E(Gen)			

*Legend: R = changes generating increased revenues for general fund balances.
E = changes generating increased revenues at least partly linked to or earmarked for education purposes.
ER = changes in a source generating increased revenues at least partly linked to or earmarked for education reform purposes.

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Table 6 (continued)
Sources and Purposes of State Tax and Fee Actions: 1980 to 1984

	Expanded or New Revenue Sources*				
	Income	Sales	Property/ Wealth	Tax Incentive	Other
Southeast					
Alabama					R(Severance)
Arkansas		ER(Gen)		ER(Fndtn)	
Florida	R(For. Inc.)	R(Gen) R(Liq) R(Gas) R(Prop. Sales)	R(Raise Mill.)		R(Vehi. Tags)
Georgia					
Kentucky	R(Loc. Opt.)		E(Raise Mill.)	ER(Fndtn)	R(Loc. Occup Opt.)
Louisiana		R(Gen) R(Liq, Cig) R(Gas)			ER(Corp. Franchise)
Mississippi	R	E(Gen)			
North Carolina		E(Gen, Loc)			
South Carolina		ER(Gen)			
Tennessee		ER(Gen)			
Virginia					
West Virginia		E(Gen)	E(Std. Mill.) E(Excess Mill.)	ER(Fndtn)	R(Lottery)
Plains					
Iowa		R(Gen)			
Kansas					E(Severance)
Minnesota	R(Expir)	E(Gen)		E(Deduct)	
Missouri		R(Gen) E(Cig)			
Nebraska					
North Dakota		R(Farm Equip, Mobile Homes)			
South Dakota					

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Table 6 (continued)
Sources and Purposes of State Tax and Fee Actions: 1980 to 1984

	Expanded or New Revenue Sources*				
	Income	Sales	Property/ Wealth	Tax Incentive	Other
Rocky Mountain					
Colorado		R(Gen)			R(Fees)
Idaho		E(Gen)			
Montana			E(Min. Levy)	ER(Fndtn)	
Utah		R(Gen)		ER(Fndtn)	
Wyoming			E(Std. Levy)		
Southwest					
Arizona				ER(Fndtn)	
New Mexico					
Oklahoma		R(Gen) R(Liq, Cig) R(Beer) R(Gas)			
Texas		ER(Gen) ER(Liq, Cig) ER(Gas)			
Far West					
Alaska					
California				ER(Pvt)	R(Lottery)
Hawaii					
Nevada					
Oregon					R(Lottery)
Washington					

*Legend: R = changes generating increased revenues for general fund balances.
E = changes generating increased revenues at least partly linked to or earmarked for education purposes.
ER = changes in a source generating increased revenues at least partly linked to or earmarked for education reform purposes.

SOURCES: Susan Walton, "States' Reform Efforts Increase as Focus of Issues Shifts," Education Week 3 (December 7, 1984), pp. 5-17; and various issues of Education Week, volumes 3 and 4 (1983 and 1984).

Information compiled from reports about state revenue activities over the past several years is detailed in Table 6.[7] Some 32 states altered tax codes or fee levels to generate increased revenue. Nineteen states linked, or earmarked, revenues from specific sources directly to education. In an even more significant response, six states dedicated at least part of the revenue from at least one source to educational reform initiatives such as teacher salaries, longer school day or year, or mandatory kindergarten (Maine, Arkansas, Louisiana, South Carolina, Tennessee and Texas). Finally, a growing number of states are introducing incentives for additional funding and in-kind support through their state tax systems. Twelve more states now offer new or expanded tax deductions, tax credits, or indirect subsidies for private contributions, donations of equipment, or other private initiatives in support of education.[8] The gross dollar volume of these latter efforts remains relatively modest, with the states absorbing some of the cost through reduced tax revenues from those making the qualified expenditure or donation.

In Table 7, we document the scope and volume of increases in budgeted commitments for reform-related activities in six states, including New York. Of these states, California, South Carolina, and Texas have adopted major, comprehensive reform programs, with substantial amounts of state funds targeted specifically on teacher salaries, instructional time, and various curriculum or school improvement activities. With the exception of South Carolina, the funds for reform initiatives are modest when compared with existing levels of state support. Funding specifically for reform activities in Illinois, Michigan, and New York appear to be quite modest. The two Great Lakes states have not yet recovered from the 1981-83 recession, and though ambitious reform proposals emerged in both states, the limited state resources as well as an ongoing tradition of peripheral state involvement in local program and spending decisions, certainly influenced the amounts allocated to support the proposals.

New York State's funding for categorical, reform-related programs also represents a very small share of the increase in funds as well as of the total amount provided to districts. The state has historically assumed no direct role in setting teacher salaries or other school operating costs. But,while appearing to be generous, the most recent increases in state aid significantly reduce the state commitment to equity. This commitment is embodied in the operating aid formula, which provides state aid inversely to local wealth. In 1984-85, the state aid plan

Table 7

State Support for Educational Reform in Selected States: 1984-85
(millions of dollars)

	New York	Calif.	Texas	Mich.	Ill.	South Carolina
Total State Support, 84-85	$5,357	$9,850	$5,230	$2,468	$2,490	$1,290
Increase, 82-83 to 84-85	800	1,850	1,200	370	160	410
Funds Allocated for Specific Reform Initiatives						
Teacher Pay						
General		24	350			60
Merit/Career		31			1	1
Teacher Development						
Inservice	54	5				1
Certification						
Loans/Fellowships	2					
Curriculum						
New or Revised	11	41		39*		64
Equip/Materials	33	40				
Student Testing		6	7			1
Instructional Time	4	256	101	36*		4
Class Size			1,000			
Other						
Magnet	6					
School Incentives		28		*		1
Other	28		7		1	60

*Michigan's reform program provides per pupil incentives for schools meeting state-mandated curriculum and school day standards.

Figures report increases in allocations from 1982-83 level. In some cases, the reform initiatives have not been fully phased in; the figures shown here, therefore, understate the state's expected commitment to reform efforts (e.g., California, South Carolina, Texas). In some states, the state commitment to funding for reform initiatives is limited to a fixed number of years (e.g., California).

SOURCES: Estimated from Allan Odden, Education Finance in the States: 1984; National Education Association, "Estimates of School Statistics, 1983-84"; Education Week, various issues, volumes 3 and 4 (1983 and 1984).

lowers the state share of the minimum guarantee from 41 percent to 36 percent for the average wealthy district. This change raises the possibility that low wealth districts, some which presumably could benefit greatly from more funds and targeted programs, might receive relatively less in state support than in previous years.

In Hawaii, reform-related activities have been funded through cutbacks in other areas (travel, printing and supplies). In Wisconsin, where the "trade-off" between funding for excellence proposals and basic state aid increases was clearly drawn, state policy-makers opted for maintaining the state commitment to basic operating expenses in the schools rather than moving strongly on proposed reform initiatives.

III. Concluding Observation

The public expectations raised by state reform actions, as well as the states' own commitments to increasing the effectiveness of schools, indicate that the actions taken carry with them a strong incentive for periodic assessment and evaluation. In a positive but very real sense, many of the state actions can and ought to be considered experimental. The effects of the actions on the efficiency and equity in the improvement of student skills can hardly be predicted with certainty. A continuing assessment of actions should help state policy-makers better choose among the options available to them. Moreover, a close monitoring of outcomes should permit adjustments that better serve public purposes. Given the variety of approaches and efforts among the states, the failure to undertake a continuing assessment of state actions would most certainly weaken efforts to develop sound and successful strategies for improving education.

Notes

1. Oddly enough, few recommendations are made for creating new incentives for students though any number addressed student discipline issues. Students, presumably, would be the main beneficiaries of improved administration, teaching, curriculum, and school discipline, thus eliminating the need for special incentives.

2. The expanded use of student testing, another receiving some attention in the reports, is addressed in the companion paper by Edward Kelly.

3. Not all of these states adopted salary increases as part of a reform package. In some states, salary scheduled may be set at the state level. Increases in the schedules are supported through increases in state funding. However, since salary increases represent one of the core recommendations in many of the reports, we document here the number of states that have targeted funds on salaries as opposed to general operating aid.

4. The New York State Education Department's initial estimates of the costs of a fully-implemented Regents' Action Plan exceeded $800 million in 1988-89 (expressed in constant 1983-84 dollars). The revised, scaled down Action Plan will, of course, cost less.

5. The per pupil figures are reported on the basis of average daily attendance, which minimizes much of the difference in state accounting of attendance. Although some discrepancies remain, these are not likely to distort the general ranking shown here.

6. The trend in the volume of state funding within an individual state could also be affected by the rate of growth in enrollments, tax and spending limitation measures (such as those adopted in California and Massachusetts), and the rate of economic growth.

7. The information provided here comes from a review of published information on state actions, rather than a comprehensive survey of state agencies or legislatures. It should be interpreted, therefore, as a general indication of the range and extent of tax and financing initiatives in the states.

8. Among the more creative state initiatives are Indiana's tax credits for employers who hire teachers during the summer and Pennsylvania's incentives to companies who permit their employees to teach in the schools.

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Appendix

Detailed Outline of State Educational Reform Actions

1982 to 1984

The data compiled in this Appendix were drawn from three principal sources:

Education Commission of the States, Task Force on Education for Economic Growth. (1984). Action in the states. Denver, CO: Author.

U.S. Department of Education. (1984). The condition of education (1984 ed.). Washington, DC: U.S. Government Printing Office.

U.S. Department of Education. (1984). The nation responds: Recent improvements in education. Washington, DC: U.S. Government Printing Office.

New York

1. Teacher Preparation and Certification
Starting in September 1984, an entry examination will be required for teacher certification.

2. Professional Development for Teachers
Legislature appropriated $20/pupil if all day staff inservice is provided.

4. Instructional Time
Legislature appropriated $28 million for programs to improve attendance in selected schools.

5. Financial Appropriations
As above, dollars shifted from equalization formula to "reform" programs.

Alabama

1. Teacher Preparation and Certification
Trade teachers without a bachelor's degree required to pass English proficiency and occupational competency tests.

A scholarship program is directed at teacher shortages in math and science.

3. Curriculum
Kindergarten has been made mandatory.

5. Financial Appropriations
$50,000 for a one district pilot program for gifted students.

Alaska

3. Curriculum
The State Department of Education has begun a program to assist districts in assessing their programs and designing and implementing reforms.

Arizona

3. Curriculum
As of 1987, high school graduation requirements for math, science and English will be increased by one year to 2, 2 and 4 years, respectively, for a total of 20 units.

In the same year admission requirements to state colleges and universities will be raised.

The Legislature has mandated that the State Board of education develop: (a) minimum skill requirements for graduation from 8th grade and high school; and (b) courses of study for all subject areas and grades.

Arkansas

1. Teacher Preparation and Certification

A forgivable loan program for training and retraining in math and science education has been established.

Teachers must pass a basic literacy test and an exam in their subject area or else take an additional 6 credit hours in that area.

3. Curriculum

As of 1987, high school graduation requirements will increase to 20 units. In 1990, entrance requirements for state colleges will be raised to reflect the new high school graduation requirements.

In grades 1 through 3, class size will be limited to 25 students, and in grades 4 through 6 to a maximum of 28 students.

4. Instructional Time

School day has been increased from 5 to 5.5 hours.

In 1987, the school year will be extended from 175 to 178 days and in 1989-90, another 3 days will be added.

In 1987, teacher contracts will be extended to 185 days and in 1989 to 190 days.

The school leaving age has been raised from 15 to 17.

A statewide parent involvement program has been initiated to provide parents with materials and training to assist them in helping their children with homework.

5. Financial Appropriations

$25,000 appropriated for a math/science teacher loan program.

$1.5 million appropriated for a computer education program and to provide financial assistance for district computer projects.

California

1. Teacher Preparation and Certification

In areas of shortage, schools permitted to hire teacher trainees with bachelor's degrees and passing scores on the California Basic Education Skills Test. Trainees must be assigned a mentor teacher and provided with an individualized training plan.

After 1985, individuals who obtain certification will be required to complete 150 hours professional development every five years.

Individuals receiving training (or retraining) in areas of shortage are eligible for loans which may be forgiven if they subsequently teach those subjects.

Minimum teacher salary program initiated.

2. Professional Development for Teachers
As of 1984-85, up to 5% of a district's teachers may receive up to $2,000 for professional development.

Teachers serving as mentors or working in curriculum development will receive a stipend of not less than $4,000 a year.

3. Curriculum
As of 1987, state mandated high school graduation requirements will go into effect.

Specialized high schools for high technology and the performing arts are being developed.

Summer school programs will be established in math, science, and other areas.

4. Instructional Time
School districts may increase the school year by 5 days to 180 days a year and instructional time from 240 to 300 minutes a day in grades 4-8 and 240 to 360 in grades 9-12. Districts that add time will receive state funding. Per pupil payments range from $20-$40 per pupil for incremental increases.

5. Financial Appropriations
In 1983 the Legislature enacted an $800 million reform bill.

Colorado

Connecticut

1. Teacher Preparation and Certification
State colleges and universities have been authorized to use unallocated bond funds to forgive loans for teacher candidates in subject areas where there are teacher shortages. The State Board of Education has adopted new procedures and standards for teacher preparation programs.

3. Curriculum
As of 1987, 18 units will be required for high school graduation. The state had no previous requirements.

Delaware

1. Teacher Preparation and Certification
Since 1983, applicants for teacher certification have been required to pass a basic skills test.

2. Professional Development for Teachers
The state supports local professional development projects and, in conjunction with the University of Delaware, conducts two statewide teacher inservice meetings a year.

3. Curriculum
As of 1987, 19 units will be required for high school graduation.

4. Instructional Time
Minigrants and inservice are targeted on efforts to improve student time on task.

5. Financial Appropriations
All state employees received a salary increase retroactive to January 1984.

District of Columbia

1. Teacher Preparation and Certification
Beginning in 1983-84, new teachers are required to demonstrate computer literacy before receiving tenure.

Florida

1. Teacher Preparation and Certification
1983 law provides for certification of adjunct instructors; student loan and scholarship programs in areas of critical shortage; tuition reimbursement programs; and a visiting scholars program to encourage Ph.D.'s to teach in high schools.

2. Professional Development for Teachers
Merit pay awarded for student achievement gains, teachers in successful schools, and teachers in an area of shortage.

State administered and funded associate master teacher and master teacher program.

Summer institutes will be established for math and science teachers.

3. Curriculum
Increased emphasis on lab exposure in math, science and computer for K-12 students.

High school graduation requirements were increased to 22 credits, with three each in math and science. As of 1986, the requirements will be increased to 24. Tenth graders will be required to write a paper every week. These requirements will be reflected in the admission policy of the State University. The University will also require two years of a foreign language for admission.

5. Financial Appropriations
$80 million appropriated for 1984-85 merit pay increases (and career ladder program?).

$9.6 million appropriated for teacher summer institutes in math and science.

$30 million appropriated increase student lab exposure.

Georgia

1. Teacher Preparation and Certification
From fiscal 1984 on, loans will be available for study of math and science education. Loans will be forgiven recipients who teach in areas of the state experiencing shortages.

2. Professional Development for Teachers
Georgia universities and Macon vocational-technical schools have begun to offer summer institutes for teachers responsible for advanced placement courses in science, mathematics and other areas.

3. Curriculum
In November of 1983, Georgia raised the requirements for high school graduation to 21 units.

The state has issued new guidelines for curriculum and is aiding districts in supporting magnet schools.

5. Financial Appropriations
10% salary increase approved.

$135,000 available in fiscal 1984 for loan program.

Hawaii

2. Professional Development
The state requires inservice advisory councils in all public schools and has modified its salary program to include increases for additional professional credits.

Idaho

1. Teacher Preparation and Certification
An interim three year reading certificate renewable for three additional years was adopted for high school teachers of English, special education, drama and speech.

Beginning in September 1984, teachers will be required to earn the equivalent of six semester credits within five years prior to recertification.

2. Professional Development for Teachers
The state has funded planning for a teacher career ladder program.

3. Curriculum
As of 1988, high school graduation requirements will be raised to 40 semester units, including four each of math and science.

4. Instructional Time
As of 1983, high school students must be in attendance for 90% of the time to receive class credit. Local districts have been mandated to adopt attendance requirements for elementary school students.

5. Financial Appropriations
New legislation has increased state aid to schools by 15%. It includes among other items: (a) $100,000 for development and administration of the career ladder program; and (b) $20.3 million for teacher salary increases. As a result, the gap between Idaho salaries and national average has been reduced by 60%.

Illinois

2. Professional Development for Teachers

Scholarships are available for retraining in math and science education.

Grants are available for staff development and computer inservice training programs.

3. Curriculum

High school graduation requirements were changed in 1983.

Summer institutes for gifted students in math, science and technology have been funded.

Indiana

1. Teacher Preparation and Certification

Forgivable loans have been made available for training and retraining in curricular areas for which there are teacher shortages. Tax credits are offered to employers who provide summer employment for teachers of these subjects.

As of 1985, teachers must pass a test before certification is awarded.

2. Professional Development for Teachers

The Consortium for Computer and High Technology was founded for the training of teachers and administrators.

Continuing education and evaluation plans for teachers and administrators have been developed.

3. Curriculum

Over the next four years the teacher/student ratio will be reduced to 1/18 in grades K-3.

Effective in 1989, high school requirements will be increased to 38 semester credits.

Dollars appropriated for gifted and talented programs.

4. Instructional Time

As of 1985, the school day must equal at least five hours for grades 1-6 and six hours for grades 7-12.

5. Financial Appropriations

$6 million per biennium was appropriated for the Consortium for Computer and High Technology. Another $5 million was set aside for loans to school districts to purchase microcomputers.

$1.5 million was earmarked for programs for the gifted and talented.

$18,000 will be given each district for each additional teacher hired as a result of the new maximum class size legislation.

Iowa

1. Teacher Preparation and Certification

State funded pilot program has started which uses telephones and interactive computer programs to improve the preparation of physics teachers.

Forgivable loans have been made available for training and retraining in math and science education.

2. Professional Development for Teachers

Funds also appropriated for inservice programs in math and science.

3. Curriculum

The high school physics curriculum has been rewritten.

School districts will be awarded incentive grants of $25 for each student enrolled in advanced science and math courses. There will be a one year incentive program for enrollments in foreign language.

Incentives in the form of first year tuition grants at Iowa public postsecondary institutions will be available to students who meet certain curricular requirements.

5. Financial Appropriations

Funding for above initiatives. School aid and property tax credits exempted from budget cuts for this school year.

Kansas

1. Teacher Preparation and Certification

The State Board of Education and the legislature have approved an initiative requiring a pre-certification test for all teacher candidates who have successfully completed a teacher training program.

Kentucky

1. Teacher Preparation and Certification

1984 law established competency testing and one year internships as requirements for certification.

Forgivable loans available for training or retraining in math and science education.

3. Curriculum

Kindergarten has been made mandatory.

Increased remediation for students in grades 1, 2, and 3 has been funded.

In 1983, instruction in certain minimum basic skills was adopted as a requirement for school accreditation.

In the same year high school graduation requirements (and college entrance requirements) were increased to 20 units.

A pilot project in science and technology for 250 high school juniors has been initiated.

4. Instructional Time

Legislature rescinded mandates for several programs, including career and consumer education and ended practice of "snowbanking" days.

Maximum class sizes of 29 for grades 1-3 and 31 for grades 4-12 were established.

Beginning in 1982, selected districts were given assistance in improving leadership, instructional planning, and time management. The number of target schools was doubled in 1983-84.

Louisiana

3. Curriculum

Effective in 1988, all high school graduates must have 22 credits. Parents of 8th graders have been sent information on the change in graduation requirements and the requirements for entrance into college.

In 1983, 250 9th and 10th grade students entered the new state school for math, science and arts.

4. Instructional Time

As of 1984, the school day for grades K-12 will be at least 360 minutes.

Maine

1. Teacher Preparation and Certification

A new teacher certification law requires evaluation of and guidance and support for new teachers. It also provides for certification of master teachers.

The University of Southern Maine initiated a pilot project to attract people from other professions into teaching.

3. Curriculum

The state has established grants for early childhood programs.

Maryland

2. Professional Development for Teachers
In addition to other inservice activities, the state will provide a Teacher Assistant Team to assist in district inservice projects.

3. Curriculum
State has continued support for summer programs housed at universities, museums, etc., for gifted students in grades 5-12.

5. Financial Appropriations
New legislation guaranteed $616 million in new funds over a five year period.

Massachusetts

1. Teacher Preparation and Certification
New standards for certification have increased the requirements for preservice training, particularly with respect to courses related to the subject matter to be taught and the amount of practice teaching.

3. Curriculum
College admissions requirements have been increased to four years of English, three of math, and two each of science, social studies, and foreign language.

Michigan

3. Curriculum
New funds have been provided for gifted and talented programs.

Minnesota

3. Curriculum
The State Board of Regents has increased the number of courses districts must make available to secondary students.

5. Financial Appropriations
$5.7 million was appropriated for programs meeting the requirements of the Technology Demonstration Act.

Mississippi

1. Teacher Preparation and Certification
Forgivable loan programs have been established for training and retraining in science and mathematics.

3. Curriculum
Summer enrichment programs at universities have been established for high school students.

As of 1986, kindergarten will become mandatory.

4. Instructional Time

A teacher assistant will be placed in each grade 1-3 classroom to improve student task engagement.

5. Financial Appropriations

In 1983, $40 million was appropriated to raise all teacher salaries $1,000.

In 1985, the state will fund a $5 million mandatory kindergarten pilot project. $40 million will be provided in 1986 to support kindergartens throughout the state.

Missouri

1. Teacher Preparation and Certification

A 2.5 grade point average will be necessary for certification for all teachers and administrators. Effective in 1984-85, a minimum SAT score of 800 or ACT score of 18 will be required for admission to a school of education.

2. Professional Development for Teachers

Two universities have established summer math institutes to retrain 30 elementary school teachers to teach junior high school math.

3. Curriculum

As of 1987, 22 units will be required for graduation from high school. College entrance requirements have also been raised and will exceed those for high school graduation.

5. Financial Appropriations

37.5% of the new 1% sales tax for education has been dedicated to increasing teachers' salaries.

Montana

1. Teacher Preparation and Certification

Standards have been raised for teachers receiving provisional certification.

Eastern Montana State College has begun a two year program to recertify a limited number of mathematics teachers.

3. Curriculum

Within the next five years all Montana schools will be evaluated for accreditation.

Nebraska

1. Teacher Preparation and Certification

Appropriations were made for low interest loans for training and retraining in science and math education.

3. Curriculum
The University of Nebraska at Lincoln offers a two week enrichment program for gifted high school seniors.

College admission standards have been raised.

5. Financial Appropriations
$100,000 per year has been authorized for the student loan program.

Nevada

3. Curriculum
As of 1986, students will be required to have completed 20 units for high school graduation. An additional unit of English or math will be required for students who fail the proficiency tests.

New Hampshire

New Jersey

1. Teacher Preparation and Certification
More rigorous teacher training standards were adopted and more stringent requirements for field based pre-service experience were mandated. The new law also provides for certification of individuals with bachelor's degrees, demonstrated subject matter mastery and an internship but who have had no teacher training.

Funding for retraining in math and science was increased.

2. Professional Development for Teachers
The legislature has allocated funds for two week summer institutes for math and science teachers.

3. Curriculum
Enrichment programs (the "Governor's Schools") for high school juniors and seniors will be expanded.

4. Instructional Time
In 1983, the state began to rigorously enforce its 180 day minimum school year standard.

5. Financial Appropriations
The legislature allocated an additional $300,000 to fund teacher recertification programs in math and science. $150,000 was allocated for summer institutes for teachers.

New Mexico

1. Teacher Preparation and Certification
As of July 1984 teacher candidates must pass a basic skills test. The National Teacher's Exam is required for initial certification and performance evaluations for recertification.

3. Curriculum

Graduation requirements for math and science were increased one unit each for a total of two units each.

Within the past two years the state funded special purpose high schools have tripled in number. These schools are geared to students who cannot or do not choose to attend regular high schools.

North Carolina

1. Teacher Training and Certification

During the first two years of teaching, new teachers will be closely supervised by the staff of local schools and teacher training institutes.

To deal with teacher shortages the state provides temporary certificates, extended contracts, and scholarships, fellowships and loans for training and retraining.

3. Curriculum

The Board has approved increasing the units required for high school graduation from 18 to 20. The University of North Carolina at Chapel Hill has already increased its admission requirements.

4. Instructional Time

The school year will be lengthened from 180 to 200 days and to seven hours a day in two counties as part of an experimental project to test the effect of greater time on achievement.

North Dakota

1. Teacher Preparation and Certification

The state has replaced lifetime certification with a two year entrance and a five year renewable certificate. The first five year certificate requires three years of teaching and three recommendations. Succeeding renewals require four semester hours, teaching, and three recommendations.

In 1983, an intensive summer training program for recertification in math and science was begun. The state pays 75% of the cost, with the students paying the remaining 25%.

3. Curriculum

Changes have been made in graduation requirements within the 17 units the state is permitted to mandate. Only local districts have the authority to require additional units.

4. Instructional Time

The length of the school day has been increased.

Ohio

3. Curriculum
Effective in 1987, the total units for graduation will be increased from 17 to 18 with the addition of a third unit of math.

Districts are required to define instructional objectives.

Student/teacher ratios, calculated as a district average, may not exceed 25 to one for grades K-4.

5. Financial Appropriations
The legislature increased minimum teachers' salaries by 5% for 1983-84 and have authorized an additional 5% increase for 1984-85.

For 1984-85 the legislature has authorized major increases (totaling $1 billion) in basic aid to schools, postsecondary vocational education, and educational excellence and competency programs.

Oklahoma

1. Teacher Preparation and Certification
New law has increased entry requirements into teacher education programs and student teaching obligations. Initial licensing also requires demonstration of subject matter mastery. During the first year of teaching, close supervision will be provided to the new teacher. The teacher will be considered for certification if recommended by the supervisory committee.

3. Curriculum
State Board given the authority to implement an extended school day in two districts.

Oregon

1. Teacher Preparation and Certification
Beginning in 1985 prospective teachers will have to pass a basic skills test prior to full certification.

3. Curriculum
The graduating class of 1988 will be required to have had 22 units (an increase of one). These units include two each in math and science. The present requirement is one each.

The State Board of Higher Education approved raising the entrance requirements of state universities and colleges to four years of English, three each of math and social studies, and two each of science and other college preparatory courses.

Pennsylvania

1. Teacher Preparation and Certification
Forgivable loans are available for training and retraining in math and science education.

3. Curriculum
New course requirements and curriculum objectives have been established for all grades.

Effective in 1989, graduation requirements will be increased to include three credits in math and science, four in English, two each in arts and humanities.

A new Governor's School for Excellence is being created and enrollment capacity increased in the specialized schools for science and art.

Rhode Island

1. Teacher Preparation and Certification
The State Board of Regents has adopted revised certification and recertification requirements.

3. Curriculum
Graduation requirements have been increased to 18 units for college bound seniors. The changes include the addition of two units in math, one each in science, foreign language, and history and social science.

In 1983 the state required that all districts develop concurrent programs with local colleges to provide advanced courses for high school students.

5. Financial Appropriations
New money has been added to the education improvement fund.

South Carolina

2. Professional Development for Teachers
Funds were appropriated for teacher inservice (with credit) in science, math, and computer science.

South Dakota

1. Teacher Preparation and Certification
Beginning in 1983, regulations require the continuous training of and recertification of teachers every five years.

3. Curriculum

All districts have been required to have plans of study for state mandated courses. The state has issued new guidelines for these courses.

Beginning in 1987, graduation requirements will include an additional unit in science and math. In 1988, total units will be increased by one to 19 and thereafter to 20. College entrance examination requirements have also been upgraded.

Beginning in 1987, special diplomas will be issued to students who successfully complete (B grade point average) an academic program consisting of four units each in English, math, and science; three in social studies; and two in foreign language.

Tennessee

1. Teacher Preparation and Certification

Beginning in 1985-86, all students desiring to enter teacher training programs must: (1) submit a California Achievement Test or Pre-Professional Skills Test score; and (2) pass a standardized composition test. Students desiring certification must pass: (1) a test that measures communications skills, general knowledge, and professional knowledge; and (2) a test of competence in those areas for which they are seeking certification.

Teachers in the career ladder program (see below) must pass a recertification evaluation every five years.

2. Professional Development for Teachers

The new career ladder plan has five "rungs." Salary supplements range from $500 to $7,000 depending on level and length of contract. Currently certified teachers have the option of entering the ladder at the second level, Career Level I.

3. Curriculum

Beginning with the freshman class of 1983-84, 20 units will be required for graduation. A unit each in science and math have been added.

5. Financial Appropriations

A one cent sales tax increase and new business taxes will provide over $1 billion over the next three years to fund the reforms, which in addition to the career program include the basic school program, textbooks, special programs, etc.

Texas

1. Teacher Preparation and Certification

Beginning in 1984, prospective teachers will be required to take competency exams.

3. Curriculum

High school graduation requirements have been increased to 21 units for the class of 1987. Students in the advanced high school program will be required to take 22 units.

Pilot programs are being set up to test new after school and summer enrichment programs in math and science.

The Board of Education will implement legislation mandating a common core curriculum for all students. Minimum time allotments for each subject have also been authorized by the legislature.

4. Instructional Time

The state has specified minimum daily time allotments for elementary school subjects.

A pilot test of the effects of year round classes is being made.

Utah

1. Teacher Preparation and Certification

A new scholarship program to recruit and train superior students in the Utah schools has been approved. The scholarships are awarded students in authorized teaching programs who intend to teach in state.

2. Professional Development for Teachers

The legislature has authorized districts to develop teacher compensation and evaluation plans for the new career ladder program and has earmarked dollars for the program. Included in the package are funds for inservice, extra teaching assignments, or extension of contracts for several days.

3. Curriculum

Effective in 1988, graduation requirements will be increased to 24 credits. The additional units are for different subjects depending on whether the student is in the college entry, high interest or technology, vocational, job entry cluster.

Incentives for enrollment for advanced placement programs have been created. District allocations will be based on the number of pupils who pass the AP test with a score of 3 or more.

4. Instructional Time

A study is underway in two districts to test the association of increased class size, a longer school day, higher teacher salaries with student performance.

5. Financial Appropriations

$15.2 million has been earmarked for the career ladders and curriculum and reform.

$300,000 has been set aside for incentives for advanced placement enrollments.

Vermont

1. Teacher Preparation and Certification

New rules place more emphasis on subject matter competency and provide for certification of "non-teachers" in time of need.

A forgivable loan program has begun for students in math, science, and computer education programs. The State Department of Education is establishing a teacher placement service to assist districts in locating candidates for vacancies.

2. Professional Development for Teachers

The State Board of Education has established an Inservice Institute for Professional Development to provide more effective training for teachers and administrators in the field.

3. Curriculum

The state is implementing a set of student performance requirements for all curricular areas.

New statewide graduation requirements include: four years of English, three each of social studies, science, and math; 1.5 of physical education, and one of arts.

In 1983 two Governor's Institutes in arts and sciences were begun with the intent that they serve as model summer programs for gifted students.

5. Financial Appropriations

$50,000 has been authorized for the forgivable loan program.

Virginia

1. Teacher Preparation and Certification

The State Board of Education has mandated that admission requirements for teacher preparation programs must at least equal those of other college programs.

Beginning and incoming teachers must take the National Teacher Examination, though no minimum proficiency level has been set.

Beginning teachers must demonstrate satisfactory performance for two years before receiving a regular certificate.

A training institute has been established to help attract teachers to math and science and help them attain certification in these areas.

2. Professional Development for Teachers

State support is available for inservice training for both teachers and administrators.

3. Curriculum

Standards and objectives have been developed for all areas of the K-12 curriculum. Computer literacy has been added to the course of studies and a curriculum developed.

High school graduation requirements have been raised from 18 to 20 units, an increase of one each in science and math. An advanced studies diploma will be granted those who complete three units each in math, science, and a single foreign language (or two each in two languages).

The Governor's Center for Educational Innovation and Technology, which will open in the fall of 1984, will serve as a training/demonstration center for effective educational practice, as well as a magnet high school.

4. Instructional Time

New accreditation standards require all students to attend school a full day, which must be allocated entirely to instruction.

5. Financial Appropriations

The state financed a 9.7% across the board increase in teacher salaries in 1983-84 and will provide an additional 10% each year for the next two years.

Washington

1. Teacher Preparation and Certification

A forgivable loan program has been established for training and retraining in math or science education.

3. Curriculum

High school graduation requirements were increased to 48 credits (3 credits = 1 year of study). Increments were in math and science.

State colleges and universities have been required to adopt common minimum requirements. Institutions may then add their own requirements.

A model curriculum is being developed by the State Department of Education.

4. Instructional Time

The legislature has approved mandatory preschool programs for eligible handicapped children.

5. Financial Appropriations

Teachers will receive an across the board 7% increase in 1985.

West Virginia

1. Teacher Preparation and Certification

Effective in 1985, students in approved teacher training programs will be required to pass tests of: (a) basic skills; (b) a content area; and (c) professional educational performance before graduation.

3. Curriculum

A statewide computer-assisted instruction network has been established and is operating in 50 vocational centers. It is hoped it will be expanded to include all schools within three years.

The first Governor's Honor Academy, a four week summer program for gifted high school juniors, was held in 1984.

Students must maintain a C average to participate in extracurricular activities.

The State Board of Regents has revised its policy on college admissions to increase course requirements in certain areas.

Wisconsin

1. Curriculum

A curriculum guide has been developed for computers and education.

The first state mandatory graduation requirements have been enacted. They include: four years of English; three of social studies; two each of math and science; 1.5 of physical education; and 0.5 each of health and computer science. They are effective in 1989. The legislation provides that students must be fully enrolled for all four years.

Wyoming

2. Professional Development for Teachers

Beginning in 1983, scholarships of $250 each were made available to secondary teachers for retraining in math, science, foreign languages, computer science and telecommunications.

5. Financial Appropriations

The legislature made a one time appropriation of $140,000 for programs for the gifted and talented.

The Role of Testing in American School Reform[1]

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American educational policy makers appear confident about the precision and utility of test data as a basis for evaluating the impacts of school reform. To support this view I describe the resources dedicated to testing in American schools. I then turn to ten test-related considerations that bear on school reform and that may lessen this level of confidence. I then discuss a series of action alternatives and offer a conclusion.

I. The Status of Testing in American Schools

The National Center for Education Statistics reports that in 1981 just over forty million students were enrolled in American public schools in grades K-12.[2] On the average, these students attended school for 180 days and devoted the following number of instructional days to testing: Lower primaries, four; Upper primaries, six; Junior and Senior high schools, ten.[3] Self-selected testing, like the Scholastic Aptitude Tests (SATs), is not counted in the estimates. Using six days as an annual average, I estimate that in 1981 about 240 million student instructional days were used for testing. There are reasons to believe this a conservative estimate.[4]

Not every child attends school daily, and not every hour of schooling is used for meaningful instruction. Our best liberal estimates suggest that, on the average, three hours of each school day are devoted to direct instruction, three hours during which students are involved with a learning task.[5] Given that a school day may be six hours long and that about fifty percent of each school day is possibly used for instruction, I estimate that of the 240 million school days devoted to testing, 120 million represented full instructional days, days that could have meant six solid hours of on-task academic learning time. This adds up to 666,000 instructional person years or a complete K-12 education of the highest instructional quantity for 55,555 students.[6]

Not counting the personal costs that students incur due to a loss of instructional time, and using $16 per day as an estimate of the average national daily expenditure for instruction, in 1981 Americans spent about 3.84 billion dollars on testing in public elementary and secondary education. This figure does not include the professional time classroom teachers spent preparing, scoring, interpreting, and reporting the results of the tests they made and gave, or the costs incurred by local agencies for standardized test purchases.

These figures do not exceed the present cost reports for two B-1 bombers , but in a qualitative sense they are important. Recall that the best available research supports the conclusion that the number of minutes a learner spends involved with a learning task at an appropriate level of difficulty is one of the most important learning events that happens in schools.[7] On balance, we have to ask whether devoting six or more percent of the annual school year to testing helps people learn. Standardized testing seems intended far more for administrators and policy makers than for teachers and students.

The research on feedback and knowledge of results is convincing with respect to selected tasks. Teachers need to monitor student response on a rapid and consistent basis. Within the activities of a single lesson such monitoring affects teacher decision making and student reinforcement. We ought not believe that standardized testing facilitates this process.[8]

More important, we must not believe that testing can satisfy even a modest portion of the expectations of school reform. Our tests are not perfect measures of knowledge or belief. They cannot measure learning, because they produce correlates or proxies for the behavior, knowledge, and belief that we wish to assess. Tests provide a basis for inference.

For example, there is a real difference between the total <u>score</u> correct on a broad range test of calculus and the <u>claim</u> that a person <u>knows</u> calculus. The difference between the score and the claim is important. The observed score is used to estimate the number of questions we would have answered correctly if the test had no error in it. The items themselves constitute a sample from a universe of possible calculus items that could have been asked. The claim made from a test score is an inference to that universe of all possible items from which the test is a sample.

If you and I take the same calculus test and get the same score correct, this does not mean that we answered the same questions correctly. But we will most often receive the same percentile ranking, and some will believe that we hold equal knowledge of calculus. Neither percentage correct nor national norm referenced results permit us to say whether you or I know calculus. About the best they permit us to do is to see where our scores placed us in a distribution of scores either within our school or across the nation. They do not permit us to say how much we know. They simply permit us to say where we placed in a distribution, and this is very different from claiming that I know calculus.

But testing can do some other things. There is evidence, for example, that the threat of testing affects both teacher and student practice and preparation of what they believe will be tested.[9] Testing may affect anxiety and cheating, introduce bias and normative comparison, and mitigate learning. In the case of learning there is evidence that some students learn from taking tests.[10] The evidence on this point is inconclusive, but there does seem reason to believe that it is not the test that is important nearly as much as the focus and feedback provided and how teachers and students use it.

Nevertheless, we must believe something positive about testing because we are doing a lot of it, and it appears that we will be doing more as part of the reform effort. For example, a survey of basic skills testing in the United States reports that by 1985 forty-five states will have some form of mandatory statewide basic skills testing.[11] Thirty-three will also use these tests to establish minimum skill levels. Two varieties of tests are being used: published standardized tests or state sponsored batteries. Although both measures will be used with relatively equal frequency, the California and Stanford achievement batteries will be employed by ten states and the Iowa Test of Basic Skills by three others. The content areas that will be assessed are not comparable across the states, and it is important that in the area of science only 17 states have testing programs in place. Two states report required testing programs in foreign languages. These figures describe statewide practices and do not report district level testing activities; consequently, they underestimate the actual frequency of testing in the schools.

It is apparent that Americans have made magic of testing, but we are not the first society to establish it as a portion of the basis for life-related

decisions.[12] As a society we seem to hold an unrelenting belief in quantification, if not numeration. I suspect this press is related, in part, to industrialization and a corresponding concern with efficiency in a competitive and meritocratic society.

The importance of testing is symbolized by the space that the American press provides for testing results such as those from the SATs. It is ironic that Ralph W. Tyler, chair of the select committee on the decline of the SATs, has observed that the SATs are down not nearly so much because the difference between two means is statistically significant but because the American public believes they are down.[13] There exists a perceptual reality that is testing in America. We seem fascinated with quantification, grade-equivalent scores (despite their error), and gain scores (despite their unreliability). There is an old belief in measurement that if something exists it can be measured, and that because two things receive the same score on a common measure, they are the same. I need not remind you that a pound of feathers and a pound of lead both score sixteen ounces, but they are not the same. With indirect psychological measures, the problem is more profound.

I now discuss a series of issues which may reduce the level of confidence that some seem to have in testing as it bears on school reform.

II. Issues Related to the Role of Testing in School Reform

I have chosen ten issues that circumscribe the role of testing in American school reform. They are:

1. Absence of formal requirements for the study of measurement and testing in teacher preparation programs.
2. The confusion of aptitude and achievement.
3. The untrustworthiness of grade-equivalent scores.
4. The untrustworthiness of gain scores.
5. Criterion validity and the overgeneralization of test results.
6. The confusion of testing with evaluation.
7. The difference between using tests to detect effects and using tests to quantify the intended outcomes of instruction.

8. The arbitrary institution of minimal standards versus the identification of appropriate criteria.

9. Current confusions about what tests measure and the increasing role of the courts.

10. Inference, attribution, and the post hoc fallacy.

1. Absence of Formal Requirements for the Study of Measurement and Testing in Teacher Preparation Programs

Given the magnitude of testing, it is ironic that within my own graduate school it is possible that students majoring in education will complete bachelor's, master's, or even doctoral degrees and never undertake any required study of measurement and testing. This is most true at the bachelor's level. Furthermore, I am persuaded that most American educators have little professional understanding of the technical requirements of test construction.[14]

Not only are most teachers not sophisticated about testing, but the students and parents of America have no way to interpret tests, since they are, most often, test ignorant. But they believe in testing and assume that tests have been appropriately constructed, interpreted, and graded.

Let me employ an analogy to illustrate the level of testing competence I hold necessary for educators. Testing plays a critical role as an information process in medicine and education. For example, I expect that my board-certified family practitioner has a professional understanding of the meaning of the information reported on a computer printed tape describing a full spectrum blood chemistry analysis. I am not concerned whether my physician still remembers—or ever knew—the normal equivalent equations that are used to calculate the values on that data report, but I must presume that my physician knows how to interpret the data, especially when the normal ranges are reported along with the results.

I hold the same expectation of educators with respect to test data. They need not recall the statistical formulations that provide the basis for the analysis of both teacher-made and standardized tests, but they must be expected to understand what it means when an item analysis shows that the reliability of a midterm examination is .10 or what to do when the standard error of measurement begins to approach the standard deviation of a test score distribution.

Failure to employ proper testing practices at the local level can lead to tests which are unreliable and of doubtful validity. As the reliability of tests goes down, measurement error goes up. In a sense, unreliable tests are like rubber rulers that have a great deal of stretch in them. Worse yet, some teachers don't know how to estimate the amount of error or stretch in their tests. Every test, even the SATs, has some stretch in it. None are perfectly reliable. One thing that teachers and local users need to know how to do is estimate the amount of error in their measures so they don't misinterpret results by giving them an air of certainty they will never deserve. Faulty interpretation of test scores can lead to faulty decisions and unfair grading practices. Ineptitude in testing can hurt people.

The case is exemplified in the history of misplacement and misinterpretation of test results that describe the role of testing in special education. Based upon a single imperfect measure, students have been labeled, misplaced, and coerced.

If American education were an open system, this problem might be easier to resolve. Unfortunately, Lortie's description of the teaching profession as cellular, insular, and conservative still holds.[15] Given that teachers are not encouraged to share teaching practices, the likelihood that they will share testing practices is remote. In the end, students lose on both counts. Not only does the teaching profession continue in a strange penumbra, but the day-to-day practice of testing and grading, whatever its strength or weakness, is undisclosed. In Albany in October 1984, Fred Hechinger, education editor of the New York Times, made this point eloquently when he observed that one of the problems with American public schools is that they are not very public. The public school educator is protective of information, especially of testing information. It was primarily through Hechinger's efforts, for example, that the schools of New York City now publish their annual test results in the public press.

If testing is to become a trustworthy indicator in education, we ought to begin by increasing the likelihood that effective classroom testing occurs at the local level, because it is here that its effects are most critical for students and parents. The effects of classroom testing bear more on the practice of educators than do standardized tests or assessments of educational progress.

2. The Confusion of Aptitude and Achievement

Most test manufacturers know what they are doing, and in most instances attempt to tell people how their tests should be selected and interpreted. Test manufacturers know, really know, that there is some error in their measures and that there is no way to get rid of it. They also know, for example, that aptitude and achievement are psychological constructs that are poorly defined, and that such scores are imperfect and correlated. These measures have error in them. Ignorance on the part of test users has led to misinterpretations of aptitude and achievement test results that support labels such as "under achiever" or "over achiever." Research findings support the belief that many such categorizations, especially "under" and "over" achiever, are unstable (next year the student is apt to classify in a higher or lower category). This instability is a result of measurement error and the fuzzy nature of the constructs aptitude and achievement.[16] More practically, how can people ever exceed their capability as suggested by the metaphor over achiever? Can a quart hold more than a quart? The misuse of measure affects people's lives.

There is in measurement an artifactual phenomenon: extreme low scores tend to get higher and extreme high scores tend to get lower over repeated administrations of the same measure. This is called regression toward the mean, and the policy-relevant concern is that there is little we can do about it. Such regression occurs because true scores tend to lie closer to the mean than do extreme scores, and consequently, very high or low scores have a tendency to moderate toward the mean score. The only way to prohibit this is to use perfectly reliable tests, which don't exist.

3. The Untrustworthiness of Grade-Equivalent Scores

Consider as well the use of grade-equivalent scores for the allocation of aid to students. This is also premised on a misunderstanding of both the technical accuracy of measures and a denial that regression will occur. The professional interpretation of grade-equivalent scores is exceedingly difficult due to differences in norming dates, the assumption that all grade levels are equally difficult, and the misperception that a grade-equivalent transformation indicates the grade level at which a student is performing. For example, consider an academically able third grader who obtains a grade-equivalent score in reading of 5.8. The child's score is equivalent to an average score near the end of fifth grade, but it does not mean

that the child can do fifth grade work. The measurement error contained in such scores tends to be excessive (as much as nine months). This combination of problems ought to make the use of grade-equivalent scores suspect at all levels of education.

4. The Untrustworthiness of Gain Scores

In addition, the unreliability of gain scores is notorious and has been documented for years.[17] What some have been doing is administering a standard measure at the start of a program and again at the end, and then subtracting the two values and using the difference (if positive) as evidence of pupil gain. The problem is that the reliability of gain scores is determined by the reliability of the two tests and the correlation between them is, and will always be, lower than the reliability of either of the tests unless the correlation between them is zero, an unacceptable state of affairs in education. For example, consider a program that assigns children based on scores from a nationally standardized examination with a reliability of .84, and after a year retests the children with a parallel form with a reliability of .84. If the correlation between the two tests were .81, the reliability of the difference would be .16. This means that the observed gain scores have a low relation (.16) with the true gain achieved or not achieved by students. To put it another way, 84 percent of what is contained in the observed gain score distribution is probably measurement error. One would hope for a more trustworthy index on which to allocate resources and against which to assess students and educational programs.[18]

5. Criterion Validity and the Overgeneralization of Test Results

We can interpret test scores with respect to the past, present or future. Politically, we are concerned with all three views as the occasion suits us, yet most educational decisions focus on present and future interpretations.

No one is really interested in the magnitude of the total score correct on any test except as that score has bearing on some person's life or livelihood. In a sense all testing wants to speak to the tomorrows of our times. Measurement specialists know this and they call it predictive or criterion related validation.[19] We need to be more careful in our interpretations of test results by being mindful of the difference between comparing a person to a group and comparing people to themselves. I may have made remarkable progress in reducing my time for the

mile run after a year of practice, but compared to the average time of individuals my age, my time may still look terrible. A similar example appears in the role of testing in well constructed and conducted individualized educational plans (IEPs).

A principal reason testing must be tomorrow oriented is that from test results, even those from the National Assessment of Educational Progress (NAEP), what we want is a prediction about how a person or group will behave tomorrow. Although propositional knowledge (knowing that) is useful, if not rapidly forgotten, we want to interpret test results in terms of dispositional knowledge (knowing how). We want to make claims about what individuals and groups know how to do and whether they will do it tomorrow.

Due to the imperfect nature of measurement, wisdom suggests that our decisions about tomorrow employ multiple sources of data so that we need never be reliant on a single indicator. Studies of the use of test data support the belief that in the classroom, and at the administrative level, results of standardized and teacher-made tests are used differently and along with other evidence. Although teachers may lack a strong technical understanding of measurement's principles, they use more than test results when they make decisions about students and about their own teaching.[20] The same is true of school and district administrators.

I become concerned when I examine the reports administrators issue to parents to encourage the belief that tax dollars are well spent. It is puerile that the craft of teaching and the contingencies in human learning find their aggregate report in the number of National Merit Semi-Finalists, scholarships, college enrollees or admits, medal winners, students graduated or promoted, and in mean SAT scores. It may be that school administrators already possess a deep mistrust of test results, and perhaps it is no accident that district reports of school outcomes make little use of them. If the results of testing, even at the classroom level, are as imperfect as I describe, why then should I encourage educators to be more public about reporting the results of such measures? My view on the matter is that if tests are worth administering in the first place, then their results must be worth reporting. If this is not the case, then we ought to stop giving the tests.

Aggregated at state and federal levels, creating a report card for schools is more troublesome. It is not surprising that some have begun to view the SAT

mean like the Dow Jones stock average, despite the fact that the SAT was developed to predict collegiate success (GPA and graduation) and not as an indicator of the quality of educational market transactions or an index of gross educational product.

It is no accident that the SATs capture more attention than the results of the National Assessment of Educational Progress because, in the minds of many, the SATs are seen as predicting the educational futures of people. The public's fascination with fluctuations in test scores like the SATs is reminiscent of the reactions I hear to points scored in a football game. You get three points for a field goal (the SATs are up), but what we're really hoping for is a couple of touchdowns and extra points so we can put some big scores on the educational scoreboard and win the game.

I suspect it will not be long before similar public use surrounds the National Teacher Examination (NTE) or its alternatives. Schools of education will claim bragging rights when their graduates' mean is near the top of the distribution. It is preposterous but possible that confronted with two new teachers in third grade, a well-intentioned parent will ask for their NTE scores and argue for the teacher with the numerically higher score. The same response will affect states that require the NTE.

The National Teachers Examination, a forerunner of the present NTE, was published by Ben D. Wood in 1940.[21] Wood's examination attracted little attention, because the country had other matters on its mind at the time. The current NTE, published by the Educational Testing Service (ETS), is attracting attention. The examination stands as one of a set of teacher competency assessment devices used to screen teacher applicants. At least thirty states employ some type of assessment for prospective teachers, and of these, eighteen use or shortly will implement a version of the National Teacher Examination.[22]

The test is divided into parts and follows a traditional model. ETS argues that it is not intended to predict who will be an effective teacher but that its purpose is to act as a screening device for the first two years of teaching. The examination core battery includes the Test of Communication Skills (listening, reading, and writing—both short answer questions a content-free essay), the Test of

General Knowledge (literature and fine arts, mathematics, science, and social studies), and the Test of Professional Knowledge (questions on teacher practices and contexts and their interactions). It is worth a passing comment to note how odd it is to have people write about a topic that is content-free (requiring no special knowledge), as if such existed or as if that is the best way to discover how well a person composes. The blueprint for the examination is structured around the cognitive taxonomy and stresses items at and above the application level. The NTE core battery is written for a person who reads at the twelfth grade level and is a timed test that takes six hours.

The test's increasing rate of use may be related to the public's belief that the literacy of the teacher corps is dropping, and that people who are not capable readers, writers, and thinkers should not be entrusted with the education of America's students. The examination stresses just such matters and pays less attention to the craft of teaching. The fact that ETS does not claim that the test will predict effective teaching is difficult to accept. What is to be done with a national teacher examination that does not claim to predict teaching effectiveness?

There is a research base for identifying effective teaching.[23] We don't know everything we want to know, but we know enough to develop a measure or set of measures that will identify people who possess sufficient understanding and skills in teaching to qualify for placement in school districts, given the expectations of these districts.

6. The Confusion of Testing with Evaluation

When we ask about the effectiveness of school reform, we are asking also about the wisdom of decisions and the trustworthiness of the data that supports them. To evaluate school reform will require that we evaluate our testing, whether it occurs as part of a unit of instruction or in a national effort to increase attainment levels in science, mathematics, and foreign languages.

To test is not to evaluate, although test data may form a portion of the grounds for an evaluation. It is important to remember that if it were impossible to test, it would still be possible to evaluate. Furthermore, tests never make decisions; people do that. Insofar as test results bear on policy alternatives, then tests ought to be evaluated. Ironically, we are far more disposed to evaluate

people—children, teachers, and administrators—than we are to assess the measures on which, in part, our judgments are based.

Efforts toward school reform will increase pressures for accountability at the local level. Some states have already instituted regulations requiring increases in the frequency of testing along with mandated district level staff evaluation systems. We will have to spend time worrying about who will perform these activities with conscious competence and sagacity. If the current state of professional knowledge about measurement should give us pause, the current status of educational program evaluation ought to stop us cold in our tracks.[24]

7. The Difference Between Using Tests to Detect Effects and Using Tests to Quantify the Intended Outcomes of Instruction

Given the limited array of standardized measures available to educators, it will prove difficult to assess comprehensively the impact of school reforms proposed or implemented. Educational outcomes cover a broad range. We need to broaden the realm of measurement of educational outcomes.

Cronbach's classic paper on evaluation and course improvement argued, as early as 1963, that achievement measures ought to exceed the range of the intended outcomes of instruction.[25] Cronbach wanted evaluation to consider the worth of objectives by relating them to a broader set of effects. A similar idea permeates the work of Tyler,[26] and finds its most elegant technical formulation in Richard Anderson's paper on testing for comprehension and transfer.[27]

If our real concern with school reform is to understand schools and, where necessary, improve them, then it ought to be schools that are tested and the programs within them, not students. Measurement specialists have understood for decades how to establish matrix sampling procedures that permit reliable estimation of school and program results but do not necessitate having every student sit for long tests. I suspect that one reason matrix sampling has not been used (it is in NAEP and the Michigan accountability program) is that educators are either not familiar with it or have not demanded it. Furthermore, traditional forms of standardized tests are not designed to measure instructional program effects. They are developed under the psychological tenets of individual differences to yield a rank order of scores with respect to some theory of constructs. Schools don't teach constructs. Why should schools be assessed against them?[28]

Measurement specialists are well aware that standardized tests are not designed to measure educational program effects. As a result, both school administrators and test publishers struggle to resolve questions about the fit between standardized achievement tests batteries and the objectives of district curricula. Careful comparisons of the content of a test against the instructional objectives of a program most often show some absence of it. It is here that tests are selected, even multiple tests, so that the possibility of portraying the achievement levels of the district in a valid and positive picture is increased. Every school person knows that the results of standardized testing at the local level are used by some to hold the district accountable. Given the public's belief in test results, local school boards and professional staffs face a difficult challenge.

Current criticism of the absence of school quality will exacerbate this situation, and it is likely that local testing practice will become more conservative when it comes to test selection and demand even higher levels of fit between curriculum and test. There will never be perfect fits because of the way norm-referenced standardized tests are sampled from the domain to which we wish to infer.

In addition, testing can influence teaching and the curriculum. I am not overly concerned about teachers who teach toward or for a test, as long as the test is worthy of such use. I am concerned about teachers who teach the test, just as I am about curricula that are test bound. There is much that we do not measure that can be learned. Indeed, there is much that we teach that is not measured. All tests are samples.

8. The Arbitrary Institution of Minimal Standards versus the Identification of Appropriate Criteria

Education and testing appear mired in minima. Standard setting will continue to be a political and technical problem, even as we strive to elevate expectations.

There is a useful distinction to be made between standards and criteria. Criteria are characteristics that we prize and that we use when we make judgments. In education, cognitive achievement is one of the criteria that is used to judge academic programs. Criteria answer the question, "What do you think is important about this program?"

Standards are scales that answer a different question, "How much is enough?" They are most often social artifacts that are politicized. In education there are multiple standards, because we need to make multiple comparisons in a pluralistic society. We need to assess progress according to local goals and capabilities. But we also need to compare our programs to appropriate groups across the street, down the road, or across the sea. We need both internal and external comparisons.[29]

External comparisons were one of the objectives of the International Evaluation of Achievement (IEA) study[30] in which a common core of achievement tests was administered in 22 countries including the United States. Although the IEA tests had limits, one of the results was that, in comparison to industrialized nations employing open systems of public education, the United States had nothing to apologize for with respect to the performance of its students. Even upper quartile comparisons in the IEA were supportive of the attainment levels of the brightest students in the American educational system.

Such was not the interpretation the authors of A Nation at Risk chose to give the results, despite being so informed by the commissioned paper.[31] Apparently, they were using different standards and criteria. One possible explanation of the discrepancy is the temper of the political community at this time, but another is the false belief that the way to attain excellence is by increasing standards or elevating cutoff scores.

Although there is a science of measurement that can direct the construction of tests and the interpretation of scores, the use of test results is always politicized. Evidence can be made to fit any theory, and the same appears to be true with educational tests. One way or the other, we can interpret results so they suit our agendas.

There is no adequate calculus for establishing standards, not to mention setting cutoff scores. All proposed formulations, even those employed by major test developers, are arbitrary.[32] I think we need to say this to the educational public. In so saying, we will need to explain that standards are social artifacts, existing within an educational system that has limited resources and that operates in a fixed quota system. Standards in education float around, and they are carried

by the tides called local need, on the one hand, and availability on the other. A fine example of this phenomenon is contained in the difference between open enrollment and selective admission policies.

9. Current Confusions About What Tests Measure and the Increasing Role of the Courts

Technical arguments on the meaning of content validity will have to be resolved by measurement specialists as pressure increases in the courts to hold educators and agencies accountable for student test results and, possibly, for unprofessional testing practices.

Some measurement specialists are divided over the meaning of content validity of tests.[33] For decades content validity described the logical relationship between a sample of item content from a domain to which we wished to infer based on a score. Arguments have been put forward in support of curricular validity—the extent to which a test corresponds to the requirements of a curriculum. Furthermore, consider instructional validity—the extent to which a student has had an opportunity to learn the content and behavior over which testing occurs.[34]

The language that the Educational Testing Service used to describe the origins of the item content on the NTE exemplifies the confusion that exists about the meaning of content validity. Notice how in the following paragraph, taken from the Executive Summary of results on the field testing of the NTE Core Battery Tests in New York State, an obvious effort is made to cover not only content validity but also what I have called curricular and instructional concerns. Note, as well, the concern with job relevance, a matter of considerable legal consequence.

> The suitability of using the NTE Core Battery Tests was determined (for the multiple choice questions) by expert judgments about: (1) the extent to which the content of the three NTE Core Battery Tests correspond to the curriculum of the general education and teacher training programs offered in New York State, (2) whether or not the knowledge or academic skill tested in each question was taught to applicants at some point in their education, and (3) the extent to which the content of each test question is relevant to the job of a beginning teacher in New York State.[35]

There is but one substantial view of content validity, and it is the traditional one to which I alluded. Arguments about curricular and instructional validity are not arguments about validity at all. They are, however, important arguments about the adequacy of test selection and the veracity with which instruction is designed and delivered to students. Insofar as efforts toward school reform rely on standardized test results, there will be an increase in the number of public, legal criticisms and arguments that are offered on curricular and instructional issues.

Sometimes the fact that we test can become as important as what it is we are testing. What gets included on tests can tell us something about what we think is important. It also tells the people who take the tests something. Sometimes these are not the same. If I were concerned about what tests tell, I might offer, "Testing in the medium is the message."[36] We need to be concerned about what it is that we don't test just as much as we need to be careful about what it is that we do test.

Insofar as we continue to maintain falsely that test results present a comprehensive profile of the effects of instruction, we must then also be willing to provide the resources (especially the financial resources) necessary to raise results to those levels desired, and to provide meaningful opportunities for students to attain those levels. The present pressure for accountability, when combined with our faith in measurement, drives schools in this direction.

Consider an alternative future. Let us begin by admitting that some of our tests are designed to detect attainment of intended instructional outcomes frequently stated as objectives, but the preponderance of our tests are designed under the norm-referenced model to place people into a distribution of scores. Next, let us remember that students probably learn more than we test, and that it is this broad range of effects that we need to detect. Lastly, recall that no matter how hard we try, we cannot legislate human learning any more than we can measure it, nor can we hold teachers accountable for its absence or praise them for its presence. Given these priors, how might testing be used to help us move forward toward a desirable future for our schools?

If you can accept all of my priors, one thing we might do is reduce significantly our stress on norm-referenced testing and increase the resources

allocated to learning. This would mean pressing toward significantly increased levels of academic learning time for students, in combination with reductions and alternations in testing practices such as I have described above and others that I will recommend. Curiously, although we cannot hold teachers accountable for their students' test results, we can, and probably should, hold them accountable for how they require students to spend instructional time.

10. Inference, Attribution, and the 'post hoc' Fallacy

Policy makers must become more cautious in attributing test score alternations to school reform efforts. One thing we know is that standardized test scores tend to be stable and resistant to rapid, meaningful mean score alteration. This is a mark of their technical excellence. There is a temptation, therefore, to attribute even small changes in such scores directly to reform efforts. I am bemused by the rapidity with which our President and high ranking officers of education are eager to attribute small increases in the mean score of the SATs to recent program efforts. There is in logic an old fallacy that reminds us, Post hoc ergo propter hoc. In this direction lies not informed and wise policy but superstition and illogic.

Current research directed at an explanation for the fluctuations in the SAT mean may reduce confidence in the attribution of SAT mean changes to school practice. There may be reason to believe that the changes are related to the characteristics of American families and a particular birth cohort, and that it is these factors which best explain alternations in SAT mean scores far more than do other variables.[37] What will we ever do if we don't have the SAT drum to beat in order to count cadence toward school reform?

All psychological tests are instruments that produce evidence from which we may draw an inference to a larger universe. We don't have to do this, but we most often choose to do so. I have had much to say up to this point about the risks involved in making such inferences from fallible measures. Given this set of concerns, once the inference is drawn, then we confront the problem of attributing the observed score or effect to some cause or set of causes. This attribution is far less a problem of measurement than it is a problem in the methodology of systematic inquiry. Even if we could measure educational effects perfectly, such would not guarantee that we would be able to attribute effects to valid causes.

III. Policy Alternatives

The drama critic, having judged the second act weak because it is too slow, is not required to tell the director how to fix it. At the risk of being presumptuous, I outline six policy alternatives that may strengthen the second act of testing in school reform.

1. The primary locus of testing in school reform is at the classroom level, and the current understanding and use of test information at that level appears inadequate. An apparent solution might be contained in regulatory alterations that would require formal training in classroom-oriented testing and grading for all preservice teachers, and a corresponding requirement for inservice for teachers and administrators. The obvious risk here is that there is considerable evidence that top down change changes little or results in superficial alterations, and that such courses do not have a good record.

An alternative might involve an increase in the professionalization of teaching through systematic reduction of the amount of time teachers are required to spend developing, interpreting, and grading tests by establishing local assessment centers to undertake these activities under the supervision of teachers. Such structures would free teachers from the technical considerations of measurement, while insuring the systematic development of the reliable and valid measures that teachers need. Located at the district level, or when this is impossible, in cross district arrangements, assessment centers should be able to employ state of the art methods and draw, as needed, on college, university, and other professional personnel to assist in the construction of classroom, building, and districtwide measures that would be expertly fitted to local needs and characteristics.

Increased availability of inexpensive microprocessors and switching systems could support the development of tailored testing practices and introduce major efficiencies in the administration and interpretation of all forms of measurement.[38] Such is not likely unless classroom teachers are knowledgeable about the alternatives, and the testing industry may not collaborate until such innovations are deemed profitable.

Before the end of the current decade we will have the opportunity to revolutionize testing in American schools. With the increased availability of microprocessors and corresponding access to mainframe computers, we will be able to create individual examinations that could be designed to the characteristics of the person and curriculum being tested.

Currently, almost all testing requires that all students answer the same questions. We have known for years that this is neither necessary nor, in most instances, desirable.[39] With the availability of large, well composed and secured item banks, we would be able to tailor the items that a student is asked against content, difficulty, discrimination, and guessing. This would mean that two students tested in the same content area might take tests of different lengths and different items. Given the difficulty of the items, and using a pre-set level of reliability and confidence, one student might answer five to seven items, while another might answer twice as many. There would be decreases in the amount of testing time necessary without losses in the precision of test results.

Through applications of tailored testing we might be able to reduce to a minimum problems related to the content validity of tests and whether or not a test actually deals with material that was taught or was supposed to have been taught. Furthermore, we might be able to control some of the biasing effects that occur when people of differing cultural backgrounds are forced to sit for the same examination. Properly constructed and controlled, the results of tailored tests could alter the instructional and diagnostic practices of educators. In time they might permit aggregation across levels of schooling that would be more interpretable than those available presently.[40]

This future has little chance of occurring in education. What is more likely is another decade of testing redone as it has been done for the last fifty years. I suspect that the massive infusions of funding that would be necessary to establish such systems at the local level and even within states will prohibit it. I think the market effects such a system would have on the testing industry would act as a deterrent unless the results suggested a profitable enterprise. Once again, teachers may become the pawns of external forces, which in the end will impede the professionalization of teaching and the reform of American schools.

On a less grandiose scale, serious consideration ought to be given to the use of microprocessors as classroom support systems dedicated to improved testing and grading. Operated either by teachers or by trained technicians working under the direction of teachers, microprocessors will permit effective local item banking, improved methods of grading, score keeping, and rapid, high quality reproduction of testing materials via laser printers.

2. We ought to abandon the use of grade-equivalent scores and gain scores as either a basis for program evaluation or as an index for allocating resources. In their place we should establish multiple indicators as the grounds for decision. Test data may prove useful, but not when they are presented in the form of grade equivalents and certainly not as gain scores.

3. Consideration ought to be given to establishing a structure to support increased student and parent public literacy about testing in education. Like the Educational Products Information Exchange (EPIE), such a structure ought to be free from formal ties with the testing industry, school districts, or state agencies. It would be dedicated to the independent assessment of the quality of measures at all levels of public education and would hold as a primary goal an increase in consumer awareness about the quality of testing.

4. Alternatives to the NTE need to be studied. I suspect that such will constitute a portion of the agenda of one or more of the research and development centers now in competition under the National Institute of Education. In addition, systematic studies of the validities of the NTE within states that have adopted it must be conducted and reported.

5. Creative work needs to be done on better ways to detect and report the processes and effects of American schools and districts. Similar efforts need to be initiated at the state level. We need to make the results of testing public, and we need to do this at all levels of education without violating people's rights. Hechinger is correct; one problem with schools in America is that they are not public enough.

To achieve this will require sweeping alterations in how local educational agencies and state offices view and report the results of testing programs. It will

also require a re-education of the public's belief in the precision of testing. If a portion of the problem is described by silence (the results are not reported), a second portion is described by the technical error and jargon that typifies most of the reports that are released. If children are to submit a portion of their learning time to testing, then they and their parents have a right to a full professional disclosure of the results and the meaning of those results. Furthermore, local districts have an obligation to inform the citizenry of the current status of education at the local level and to do so in fashions that will be both technically adequate and informative. This is no small burden.

6. The increasing pressure for accountability that will accompany the school reform movement will be highlighted in states that have increased requirements for staff evaluation at the district level. How such policies and procedures ought to be developed, implemented, and studied is not clear. What is clear is that there is no agreed upon policy description or certification requirement defining the qualifications of educational evaluation specialists. The extent to which local districts possess any kind of evaluation skill is equally unclear. This is an important policy issue that ought to be addressed immediately.

IV. In Conclusion

In a measurement manifesto, Edward Thorndike argued that if something exists, it exists in some quantity, and if it exists in some quantity, it can be measured. For more than twenty years I have distrusted this argument. Today I am no less distrustful, but I do think that we know more about measurement and testing than we are using. We may be about to expand our beliefs about what is measurable. The discomfort I now have has far less to do with what is than it has to do with how we will decide what is worth measuring and how well we will measure it.

A related question asks, "Can we measure what does not exist?"[41] What we measure takes on a reality of its own, and we talk about what we measure as if it were real. We reify through measurement. Measurement specialists can be thing-makers. Some of the things they have already reified are named intelligence, achievement, attitude, and aptitude. I think we must ask: "Are we better off?" If the answer is, "Yes," then we ought to ask, "Who is better off?"

I have wondered during the composition of this argument how American schools might look if for a period of ten years there was a ban on standardized testing. My wondering has not led to an image of schooling that is better than the one I have now, but it is not any worse. The issues that surround schooling in America will not be resolved through alterations in testing and measurement, because the important issues are not measurement issues. Ironically, about the best we can say of testing in American schools is that it has done what it was asked to do. It has established a means of control of people, social resources, and the social order.

Notes

1. I want to thank the members of my graduate classes and a wonderfully capable educator and doctoral student, Ruth Baines, for their contributions to this paper. I also wish to acknowledge colleagues who reviewed early drafts: David Chapman, John Ether, Linda Kelly, Robert Koff, Michael Green, Jim McClellan, John Rosenbach, H. Richard Smock, Sean Walmsley, and members of The Evaluation Consortium at Albany. Megyn Kelly is 13 and takes lots of tests. She read this manuscript twice and said, "This is good, Dad."

2. National Center for Education Statistics, The Condition of Education. 1983 Edition, U.S. Government Printing Office, Washington, D.C., 20402.

3. "The Effective Schools Study" as cited in the Chicago Tribune, June 1984.

4. This estimate does not include self-selected testing.

5. D. Berliner's findings from the Beginning Teacher Evaluation Study as summarized in his chapter, "Tempus Educare" in Research on Teaching, P. Peterson and H. Walberg (Eds.), Berkeley, CA: McCutchan, 1979, indicate that three hours of academic learning time each day is probably far higher than the true value.

6. When I speak of instructional quantity, I am referring to academic learning time, and I know that I am speaking about an idealized world of schooling.

7. A central issue in improving academic learning time will be to discover more effective ways to establish appropriate levels of difficulty for different learners in different contexts, and across different contents.

8. See the work of M. Hunter on bringing instructional theory into practice.

9. A primary example is contained in the growth of preparation seminar, courses, and training programs for the SATs.

10. This view is argued in several pieces by W. James Popham who supports the idea of test driven instruction.

11. Education News, July 1984.

12. W.A. Mehrens & I.J. Lehmann (1983), Measurement and evaluation in education and psychology (3rd ed.), New York: Holt, Rinehart & Winston. The frontice to this text shows a time line that indicates that the Chinese employed testing in their civil service system as early as 100 AD.

13. Personal communication between R.W. Tyler and R.H. Koff.

14. What may be more alarming is that they may not want to learn any more about testing if the results of the survey of recent teacher graduates are correct. S. Balsen, S. Fultz, G. Isidoridy, & J. Margolin, "An evaluation of an undergraduate course in educational measurement." NCME Measurement News, 19:2 (Spring 1976).

15. D. Lortie, Schoolteacher, Chicago: University of Chicago Press, 1975.

16. The construct confusion of aptitude and achievement and the fallacies attendant to it were pointed out by Truman Kelley in the 1920s. It is still the case that the item content from a standard measure of ability is often indistinguishable from the item content of an achievement test.

17. One of the clearest formulations of the problem of measuring gain appears in L. J. Cronbach & L. Furby, "HOW WE SHOULD MEASURE 'CHANGE' OR SHOULD WE?" Psychological Bulletin, 74:1 (July 1970), 68-80.

18. This example is drawn from R.E. Stake, "Testing hazards in performance contracting," Phi Delta Kappan, June 1971, 583-89.

19. To believe that a test is valid is not unlike believing that we have proven a theory to be true. The importance of validation rather than validity is demonstrated in a classic piece: L.J. Cronback, "Test validation," in Educational measurement, R.L. Thorndike (Ed.), Washington, DC: American Council on Education, 1971.

20. L.M. Rudner (Ed.), Testing in our Schools. Proceedings of the NIE Invitational Conference on Test Use, June 1980.

21. Cf. fn. 12.

22. J.T. Sandefur, Competency assessment of teachers: 1980-1983. ED 238 858.

23. One of the most useful compilations of research on effective teaching is M. Powell & J. W. Beard, Teacher effectiveness. An annotated bibliography and guide to research. New York: Garland Publishing Co., 1984.

24. Some direction is available to Standards for the evaluation of educational programs, processes, and products. The Joint Commission, New York: McGraw-Hill, 1981, and the standards for educational evaluations that have been released by the Evaluation Research Society and the Evaluation Network.

25. L.J. Cronback, "Evaluation for course improvement." In R.W. Heath (Ed.), New Curricula. New York: Harper & Row, 1963.

26. R.W. Tyler. Basic principles of curriculum and instruction. Chicago: University of Chicago Press, 1950.

27. R.E. Anderson, "Testing for comprehension," Review of Educational Research, Spring 1971.

28. This argument is well made in P.W. Airasian & G.F. Madaus, "Linking testing & instruction: Policy issues," Journal of Educational Measurement. 20:2 (Summer 1983), 103-118.

29. The necessity of comparison in evaluation is well argued in R.E. Stake, "The countenance of education evaluation," Teachers College Record. Fall 1967.

30. G.F. Peaker, An empirical study of education in twenty-one countries. Stockhold: Almquist and Wiksell, and New York: John Wiley & Sons, 1976.

31. D.B. Holsinger, Time, content and expectation as predictors of school achievement in the USA and other developed countries: A review of IEA evidence. Center for Educational Research and Policy Studies, State University of New York at Albany, Albany, NY 12222, September 1982.

32. G.V. Glass, "Standards and criteria," Journal of Educational Measurement. 15:4 (1978), 237-61.

33. CF. fn. 27.

34. E. Yalow & W. J. Popham, "Content validity at the crossroads," Educational Research. 12:8 (October 1983), 10-14.

35. Eductional Testing Service, Executive summary report on a study of the three NTE Core Battery Tests by the State of New York. September 30, 1983, p.1.

36. In addition to the work of Marshall McLuhan, I allude here to R.E. Stake, "National Assessment," Proceedings of the 1970 invitational conference on testing problems. Princeton: Educational Testing Service, 1970.

37. Research being carried out by Professor T. Bredderman, School of Education, State University of New York at Albany, Albany, NY 12222, may illuminate this issue.

38. The origins of tailored testing are to be found in a seminal article, F.M. Lord, "A theory of test scores," Psychological Monographs, no. 7, 1952.

39. A fine summary of both the theory and practical considerations of matrix sampling appears in K.A. Sirotnik, "Introduction matrix sampling for the practitioner," in Evaluation in education. W. J. Popham (Ed.), Berkeley, CA: McCutchan, 1974.

40. To do this will require the application of latent trait theory and methods for score equating available under RASCH modeling, and this is a difficult challenge.

41. I owe this important question to my colleague, Professor Mark Berger, School of Education, State University of New York at Albany, Albany, NY 12222.

A History of School Reform in New York State: Implications for Today's Policy Makers[1]

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In the past two years a multitude of commissions on the nation's schools have issued reports calling for massive educational reform.[2] In 1983 and 1984 the New York State Regents held a series of meetings throughout the state, and in August of 1984 issued an action plan which calls for changes in curriculum, high school graduation requirements, and educational standards.[3] These reforms are intended to herald an era of excellence and strengthen schooling's contribution to the state's economy. Other states have taken steps to upgrade their schools. Some have changed graduation requirements; others have moved toward changing course offerings, initiating more rigorous testing programs and changing teacher recruitment and certification requirements.[4]

While there have been reforms mandated, it is by no means clear that the changes the states are initiating will be translated into practice or, if put into practice, that they will have their intended effect. Histories of school reform indicate that it will take more to change educational practice than enacting legislation that calls for curricular revision, higher standards, and "excellence." Reforms of the past have often been nothing but a series of paper recommendations that were revived, or forgotten, ten years later.

This essay is a case study of the history of school reform in New York State in the twentieth century. Through a survey of the many commissions and reforms that sought to improve the state's schools, we ask what lessons can be learned from the past reform efforts that might inform today's policy makers. The main focus is on identifying factors that are common to these varying reform movements despite different historical contexts that have influenced their outcomes. Are there general characteristics that distinguish "successful" from "unsuccessful" attempts to change New York State's schools? While our focus is on New York State, we believe that what can be said about the many well-intentioned efforts to change

the state's school system and its educational outcomes has relevance to other states now trying to bring excellence to the schools in a time of scarce resources and erosion of public confidence in the public schools. What we can learn from the history of reform in this state can help guide policy makers elsewhere as they formulate reform programs and attempt to translate them into practice.

In this essay we do not purport to study every reform ever attempted in New York State. Rather, we have selected those reforms that represent serious and wide-ranging attempts to change the quality and outcomes of primary and secondary education, as do the national reports on excellence of the 1980s. We therefore selected three of the major reforms that attempted to change schools in New York State before World War II; namely, the Hanus Report of 1911-1913, the Rural School Survey of 1922, and the Regents Inquiry of 1937. In the post-war era, we looked at statewide reforms instigated by the federal government—the National Defense Education Act of 1957 and Title I of the Elementary and Secondary Education Act—as well as state-initiated attempts to change the quality and distribution of education; namely, the Fleischmann Commission and its successors and the Regents' Competency Testing Program. Unlike pre-World War II reforms, the reforms of the last two decades were instigated largely by the federal government and the courts. These reforms tended to treat the State as a single entity and prescribe changes for the entire state. Earlier reforms, those of the 1920s and 1930s, had not attempted to improve all the state's schools; rather, they had addressed the problems of New York City or of rural schools.

We have not organized this essay chronologically; rather, we have chosen to present our data topically, structured around what we have identified as the implications of New York State's history of school reform for current efforts. In the pages that follow we ask how reform efforts of the past have been affected by the specificity of their goals, their consistency, executive leadership exerted, resources, and provisions for accountability. Before so doing, we begin with a brief examination of how changing contexts have shaped major reform movements in the state's past. Despite the ways in which shifts in demography, economy and politics have shaped specific reforms and their impact, we will argue that successful reforms in the past have had common characteristics that are relevant to today's attempts to improve the schools.

The Context of Reform

While this essay argues that there are lessons today's policy makers might learn from the past, specific economic, social and political contexts have shaped both the goals and outcomes of attempted reform. Chart 1 summarizes the recommendations of the reforms considered in the pages that follow. As the chart shows, educational reform in New York State has varied over time in sponsorship and in recommendations. While a detailed account of the background of each reform mentioned in the chart is beyond the scope of this paper, the impact of economic, demographic, and political factors on educational reform will be illustrated by the examples that follow.

Economic conditions have played a major role in shaping the goals of educational reform. Two of the pre-World War II reforms, the Hanus Report on education in New York City and the statewide Regents Inquiry of 1937, reflected a perception of economic scarcity and therefore had as major goals the provision of more efficient, economical education. Although the Hanus Report appeared at a time when New York City's economy was expanding, the even more rapid expansion of public expenditures for urban services, especially schools, led to demands for economy and efficiency. The concern of the Regents inquiry of 1937 with more efficient uses of resources reflected the general economic contraction of the Great Depression. The federally sponsored educational reforms of the 1950s and 1960s, on the other hand, reflecting an era of relative prosperity, focused on other priorities. The National Defense Education Act of 1957, for example, grew out of a concern for America's military superiority relative to the Soviet Union; the federally induced Elementary and Secondary Education Act of 1965, and subsequent bilingual and handicapped education legislation of the 1970s, arose from Supreme Court decisions focusing on equality of educational opportunity and outcome as well as from civil rights activism and, within New York State, a growing Hispanic and minority population which began to exert political power. The reforms of the 1960s and early 1970s thus occurred within the context of economic prosperity, and efficiency was not the major concern. This was the case with the Fleischmann Commission, whose report appeared in 1973. The report reflected a real concern for equality; however, the successor commissions, appointed to implement the Fleischmann recommendations, occurred in the midst of severe economic recession and decline in the state's industrial and tax base. As a result, the recommendations were "studied" but not fully implemented.

Chart 1

Summary of Major Reforms Considered in Paper

Reform	Initiating Body	Summary of Recommendations
Hanus Report (Report of the Committee on School Inquiry) (1911-13)	City of New York, Board of Estimates and Appropriations	— Simplification and diversification of curriculum to met the needs of various "nationalities" — More cooperation and planning with the Board of Estimates and the School board in the interests of economy
Rural School Survey (1922)	State Education Department and a group of rural home and farm organizations	— Increased state aid to local districts — Consolidation of smaller districts — Upgrading of rural curriculum, buildings and staff
Davenport Commission (1925)	State Legislature, Special Joint Committee on Taxation and Retrenchment of the Senate and Assembly	— Increased state aid to local school districts "equalized" to provide a uniform minimum base for each district
Friedsam Commission (Governor's Commission on School Finance and Administration (1927)	Governor Al Smith	— Increased state aid to education — New sources of state revenue to fund education
Regents' Inquiry into the Character and Cost of Education in New York (1937)	Board of Regents of New York State	— Consolidation, centralization and reorganization of local districts — Increased influence for the State Education Department in local districts — Upgrading of teacher education — Better articulation between the school and the workplace — Curricular reform

Demographic as well as economic factors shaped the various movements for educational reform. The Hanus Report's recommendations that the New York City schools expand vocational education and social studies were a direct response to the heavy influx of European immigrants, a new school population for whom non-academic training and Americanization were considered essential. After World War II, the rapid growth of Hispanic (and other non-English speaking) and black populations meant that new constituencies militated within the state for reform focusing on equality in education. The changing nature of students in public schools also has affected reform priorities. In New York State, for example, in 1962, 13.5 percent of students in the schools were black, 7.3 percent were Hispanic; by 1982 blacks comprised 18.6 percent of all students, Hispanics 12.5 percent. In the "Big Five" cities of Buffalo, New York City, Rochester, Syracuse and Yonkers, blacks comprised 38.8 percent of the student body, Hispanics 29.0 percent.[5]

Changing reform movements in New York State reflected demographic variations not only over time, but also from one part of the state to another. The Hanus Report reflected the concerns of urban New York State, with its densely populated areas of ethnically diverse populations, complex bureaucracies, distinct educational needs, and at least until mid-century, great economic resources. The Rural School Survey of 1922, on the other hand, reflected the vastly different concerns of sparsely populated agricultural areas where isolated, educationally disadvantaged children were served by poorly equipped one-room schools and where educational leadership was often as scarce as resources. The Regents Inquiry of 1937, the first attempt to survey the needs of the state as a whole, recognized and identified a third New York, the tier of wealthy suburban counties north and west of New York City, where high incomes were reflected in large school budgets, superior educational facilities, and high achievement. While earlier educational reforms such as the Hanus Report and the Rural School Survey confined their efforts to one of these demographically (and economically) identifiable New Yorks, later statewide and national efforts have attempted the more difficult task of reforming education in the state or nation as a whole, often with insufficient attention to local and regional differences. The many reforms that have addressed racial and ethnic inequalities are directed predominantly to five cities in the state, and not the schools of rural New York or the suburban counties surrounding the state's major cities.

Finally, the importance of political as well as economic and demographic factors in shaping educational reform in New York State is evident in the changing sponsorship of the major reforms. Despite the existence of the State Education Department, most of the responsibility for planning, funding, and reforming education in the early decades of the Twentieth Century rested with the local districts, of which there were more than twelve thousand at the turn of the century. The earliest school reform movements, therefore, were initiated by cities to address local educational problems. Much of the history of educational reform in the first half of the century reflects efforts by the state to convince reluctant districts to embrace voluntarily its agenda for reform, including consolidation of rural districts and improved administrative and fiscal practices. The fact that the Rural School Survey of 1922 and the Regents Inquiry of 1937 were initiated and conducted at the state rather than the local level reflects the gradually increasing power of the state in educational funding and policy making, an increase not always welcomed by the districts. The reforms of the last two decades were instigated increasingly by the federal government and the courts, a reflection of the post-World War II centralization of financial and political power at the federal level and an added source of concern to districts (and states) fearing loss of autonomy and local prerogatives. The changing distribution of financial and policymaking power among the various levels of government—national, state, and local—continues to influence the shape and effectiveness of educational reform.

While the context, sponsorship and goals of educational reform have changed over time, in response to specific economic, demographic and political circumstances, certain characteristics seem to be shared by successful reform movements in New York State in the past. It is to these characteristics that this essay now turns.

Lofty, Vague Goals and Reform

The various national commissions on education in 1983 and 1984 have set "excellence" as a goal for education, which is expected to reinstate "America's competitive challenge." The schools, many of the reports maintain, should prepare for the technological society of the future. No one contests such admirable goals for the schools; the question, however, is whether such goals can indeed be achieved as the states enact reform.

The history of reform movements in New York State suggests that attempts to reform schools have often been ineffective when their goals and recommendations were general rather than specific and when they called for knowledge no one possessed. The fates of the Hanus Report of 1911, the Rural School Survey of 1922 and the Regents Inquiry of 1937, and of the attempts to equalize education in the 1960s and 1970s, illustrate the impossibility of achieving commendable, but vaguely defined educational and social goals.

The first important twentieth century reform commission was the Hanus Report which, while dealing with the schools in New York City, affected over half the public school children in the state. A detailed survey by experts from university education departments and municipal research bureaus, it set a precedent for other city surveys, for the multi-volume Rural School Survey of 1922 and Regents Inquiry of 1937, and for other more specialized commissions on school reform in the state. Unfortunately, the Hanus Report set a precedent for vagueness as well. It instructed schools to inculcate "those things which, if known, would insure intelligent cooperation and competition among men" but neglected to specify what those "things" were. It instructed schools to train "efficient citizens" who would "appreciate the common interests of our democratic society" but did not specify what made a citizen "efficient" or what those "common interests" were.[6] Similarly vague goals appeared in the Rural School Survey, which directed schools to give children "such training as will make them acceptable members of society," and in the 1937 Regents Inquiry, which urged that children be taught "those qualities, attitudes and abilities that are essential for efficient living in an evolving industrial democratic society."[7] Local school officials may well have been perplexed as to what measures to enact to reach these worthy but imprecise goals.

Recommendations as well as goals were often too general to be helpful. One of the main recommendations of the Hanus Report, for example, was curriculum reform. Migration from rural areas, as well as from overseas, and the extension and enforcement of compulsory school laws, had filled New York City schools with unprecedented numbers of children from widely diverse backgrounds. The Hanus Report recommended that curriculum be adjusted to meet the special needs of each individual and group.[8] The report did not specify how such a sweeping curricular reform could be accomplished, however, with the exception of adding home economics for girls. Nothing was suggested about how curriculum could be changed

to meet the needs of the dozen or more ethnic groups that might be represented in a single classroom. Twenty years later, yet another report called for a curriculum adjusted to the various nationality groups in New York City; apparently the Hanus Report's recommendations had not been implemented. Within three years, the Regents Inquiry reiterated the same recommendation.[9]

Curriculum reforms that were specific rather than general, on the other hand, were more likely to be implemented. The Hanus Report's recommendation that social studies and vocational subjects be expanded was gradually carried out in the New York City schools. On the other hand, when the Rural School Survey made the general recommendation that the many subjects taught in rural elementary schools should be consolidated, the schools continued to teach them separately. A decade later, however, when the State Education Department issued two syllabi showing specifically how to consolidate school subjects, curriculum reform took place.

In the past, commissions that have called for reforms based on knowledge no one possessed have seen their proposals shelved. For example, the Rural School Survey suggested replacing the locally elected "amateur" district trustees with state appointed, professionally trained supervisors—on the grounds that the latter would bring the benefits of the "the science of education" to local school management. The author of the recommendation admitted, however, that "We cannot point to any organized body of printed material and say 'That is our body of education science.' It is yet largely in that empirical stage when it is mainly held in the minds of the professional workers, largely as the results of their professional experiences . . . ." Rural voters rejected the proposed change of administrative personnel; they were not convinced that the admittedly primitive "scientific" knowledge of the new professionals was better than the common sense of the old trustees, who at least could be controlled by their local constituencies.[10]

A second illustration of the importance of an adequate knowledge base is the 1937 Regents Inquiry's recommendation that all teachers systematically teach good character, using methods of "proven worth." Unable to recommend such methods from their own experience or from educational literature, the Inquiry asked representative principals how they taught character in their schools. The resulting unannotated list of suggestions was then incorporated into the report for the

benefit of other principals. The suggestions (none of "proven worth") ranged from "sports" and "encouragement of recreational and free reading" to "pictures on display," "arbor day programs," and "teaching of etiquette in lunchroom periods." It is doubtful whether the report's recommendations on systematic character education were implemented, or, given current knowledge, whether they could be today.[11]

Inconsistency: The Bane of Reform

The various reports urging reform in the nation's schools in the 1980s call for a myriad of changes. The history of school reform in New York State suggests that the extent to which the reforms posited are consistent strongly affects whether any reforms are implemented at all. Diverse initiatives and sources of reform at any given period in the past had produced commission reports with recommendations so diverse and conflicting that effective implementation was difficult if not impossible. The recommendations of the Hanus Report, for example, reflected the varied and often conflicting interests of the City Board of Estimates and Appropriations who initiated it, the educators who wrote it, and the businessmen and civic and women's organizations who served as unofficial consultants. The Board of Appropriations called for school budgets based on "facts . . . not educational opinion," for better accounting, and for elimination of waste and "frills." Educators wanted the schools divorced from city politics and called for "progressive" pedagogy. Business interests were reflected in the report's request that schools "act as a transmitter between human supply and industrial demand," and civic organizations hoped to make the schools social service agencies to uplift, Americanize, and control the immigrant slum populations.[12]

Rather than choose among these viewpoints, the Hanus Report included something of each, with little regard for consistency.[13] Thus, while recommending an enriched and differentiated curriculum to please progressive pedagogues, it also called for the elimination of specialty teachers who might teach such a curriculum in the elementary schools in the interests of economy. While expressing concern for the language problems of immigrant children, the report suggested that instruction in English grammar be struck from the elementary curriculum; progressive educators thought grammar too "abstract." The report recommended more vocational training <u>in</u> the schools; at the same time it urged investigation, in the interests of economy, of on-the-job training <u>outside</u> the schools. It advised corporal punishment, isolation, and early entry into the workforce for the

recalcitrant student to prevent waste of classroom time, while advocating social and medical correction of student defects and a curriculum so "vital" (the Progressive Era equivalent of "relevant") that there would be no failures. Recommendations for expensive social services and vocational training could scarcely be reconciled with simultaneous demands for economy and efficiency. Not surprisingly, much of the Hanus Report was quietly shelved.

Reform efforts sometimes failed or became sidetracked not because of contradictory aims of reform, but because contradictory definitions of a seemingly agreed upon goal were adopted, as were conflicting strategies to achieve these goals. This was exemplified in the attempts in New York State since 1965 to provide educational equality which were, more often than not, court-mandated.

While committed on paper to "equality" since the 1960s, New York State, like the rest of the nation, has been hard pressed to define what providing equality in education meant in actual practice. The Federal Elementary and Secondary Education Act (ESEA) of 1965, which brought appreciable funds to the state from the federal government, defined equality in terms of providing the conditions for children from "deprived" backgrounds, presumed to be at high risk for failure, to succeed in school.[14] ESEA defined equality in terms of programs made available to targeted populations, not in terms of whether equality of educational expenditure or outcome was assured. While ESEA, which was administered by New York State for the federal government, defined equality in terms of programs for targeted populations, subsequent state and federal legislation provided, at times, less than consistent definitions. The Bilingual Education Act, for example, defined equality as providing mother-tongue education to students whose first language was not English. This federal legislation argued that children needed to have equal access to knowledge, not necessarily equal educational processes in a common language. The notion of cultural deficit, central to ESEA, was implicitly rejected by New York State's own Bilingual Education legislation, which insisted that minority cultures were by no means an impediment to school success.[15] Not only did federally induced and state promoted programs provide differing and conflicting definitions of equality, but additional state and federal legislation relating to handicapped children argued that equality meant that all learners ought to be entitled to participate in the same educational processes, regardless of their handicap.[16] Special schools for mentally and physically handicapped children, which

the state had sponsored for decades, were perceived as counter to the very concept of equality.

While varying state and federally mandated programs carried their own often less than consistent versions of what constituted equality, New York State initiated a series of commissions that sparked yet another debate about what equality entailed. In 1969 Nelson Rockefeller, then Governor, appointed the now almost forgotten Fleischmann Commission.[17] Its 1973 three volume report represented the first full survey of the state's schools since the 1940s. In it the Commission called on the state to provide educational equality and defined it differently from the ESEA, the Bilingual Education Act, or the legislation that mainstreamed handicapped children into the public schools. The Fleischmann Commission defined equality in terms of educational expenditure, need, and tax burden. The Commission argued that education in New York was unequal because districts with high property values were spending much more on education than districts with lower property values. Poor districts taxed themselves more heavily in proportion to their property values than rich districts and still had less to spend per student for schooling. In addition to the tax rate being higher in poor areas, the Fleischmann Commission found per capita cost of education in poor districts much higher than in wealthier districts because of the concentrations in poor districts of bilingual, handicapped and disadvantaged students, whose educational costs were over twice that of children from affluent English-speaking homes. Defining equality as the provision of educational monies according to a child's needs rather than a district's wealth or the size of the tax burden it could bear, the Commission recommended that local property tax should not be the basis for determining how much was spent on schooling.

Through the 1970s, New York State grappled with the issues raised by the Fleischmann Commission, while several cities litigated against the old state formulas for providing aid to local school districts.[18] In 1980, and again in 1982, the state issued reports on how equality in education might be provided. Meanwhile, differences in expenditures per student continued to widen between school districts. In 1974-1975, per pupil expenditures varied from $1820 to $978. By 1981-1982, two commissions later, it ranged from $3560 to $1763.[19] Equality, while state policy, remained elusive.

The Role of Strong Executive Leadership

The National Commissions on Excellence, like so many of the reports on the schools issued in 1983 and 1984, challenged parents, teachers, the community and business to reform the schools. The question must be asked, however, to what extent do the reports acknowledge the role of committed, persistent executive leadership in bringing about successful reform? The history of educational change in New York State demonstrates that unless such leadership is exerted, schools are likely to resist change. The role of Governor Alfred E. Smith in rescuing the schools from the fiscal crisis of the early 1920s illustrates how important the executive office is in bringing about effective change. During the opening decades of the century and especially after World War I, the costs of local government had risen much faster than income. Local taxes, primarily property taxes, had soared, producing an outcry for tax relief throughout the state. Cities, whose property tax rates were limited by state law, were facing bankruptcy, and the poorer rural counties had reached the limit of their resources.

While all areas of local government had become more expensive, education costs had risen most and were therefore most subject to criticism. In 1919, a legislative Joint Committee on Taxation and Retrenchment (better known as the Davenport Commission) noted "the extravagance of educational expenditures" and suggested the need for further investigation.[20] Rather than making political capital out of the drive for economy, the new governor asked the legislature for and received, in 1919 and 1920, twenty-two million dollars to increase teachers' salaries.[21] This was not an isolated triumph; rather, it was the first of a series of persistent efforts to solve the financial crisis of the schools. In the decades before Smith took office, the proportion of school expenses born by the state as opposed to the local governments had steadily declined until it reached a low of 8 percent in 1919. Legislation passed under Smith's leadership reversed this trend, raising the state's contribution by 1930 to 38.6 percent. During this same period, state aid to school districts increased from $7,474,440 to $102,000,000, permitting continuing expansion of education, especially at the secondary level.[22]

A precursor of the New Deal, Smith believed that the state should take an active role in meeting people's needs. He believed educational problems could not be solved without money and that this obligation could not be postponed "because time lost cannot be regained by the children who are injured by the state's failure

to make adequate provision for their education."[23] Smith acted on the premise that voters would support additional spending if they understood its importance and were assured of value for their money; his administration sponsored a series of commissions on education, the most important of which were the Davenport and Friedsam Commissions, and lobbied successfully to implement their recommendations.

Reversing its earlier suggestions about educational extravagance, in its 1924 report the Davenport Commission assured the public that the schools were not wasteful. Its recommendations became the Cole Law of 1925. Although it did not abolish the old "quota" system, whereby the state gave districts financial "quotas" for more than a dozen different purposes, the Cole Law added a large state grant for each "teacher unit," greatly increasing state aid. In addition, the law gave each district enough money (above what the district raised by a mandated "equalized" tax rate) to provide a minimal per student education fund. With the Cole Law, the state assumed financial responsibility for the first time for a minimum educational fund for every child, no matter how poor the child's district, and provided for statewide "equalization" of tax burden for the support of that fund.

When an economy minded legislature refused his request to finance another commission on education, Governor Smith assembled an informal conference of educators and economists, including Michael Friedsam, president of B. Altman and Company. The conference became the Friedsam Commission, chaired and financed by Friedsam; and its recommendations, sponsored by the governor, because the Friedsam Law of 1928. The Friedsam Law raised the minimal state supported educational fund, increased the state's contribution, and lowered the contribution required by the districts. In 1930, when the law took full effect, the old "quota" system—in which the state gave the districts many small grants for specific purposes, often unrelated to need—was submerged in the new "equalized" aid structure. Following the recommendations of the Friedsam Commission, Governor Smith lowered the state property tax, developed new sources of state revenue, and shared this revenue with local governments in unprecedented amounts. Thus Smith did more than advocate and lobby for increased state spending on education; he initiated fiscal policies that made local and state increases feasible.

The importance of strong executive leadership is underscored in more recent years by the failure of the state to implement the Fleischmann Commission recommendations. State government was ambivalent about what it would mean to move toward equalizing educational expenditure between school districts, with equality defined, as in the Fleischmann Report, as providing greater amounts of money to bilingual, poor, and handicapped students. The Fleischmann Commission had recommended that the state either take over all educational finance through the institution of a statewide property tax, or that the state begin immediately to equalize expenditures per pupil among and within districts by removing state aid from wealthy districts and leveling up poor districts. This would have meant that 40 percent of the districts in the state would probably lose substantial amounts of money, while 60 percent would either remain at current funding levels or gain state aid.[24]

The financial recommendations were politically explosive. Rather than take immediate action, New York's governors appointed various commissions to study the proposals.[25] These commissions focused exclusively on the property tax and state funding formulas, not because of strong leadership from the governor's office or the state legislature, but rather because of litigation that eventually led to the Levittown Decision of 1978. No agencies followed up on implementing the other recommendations the Commission made proposing changes in curriculum and standards, which are echoed in the 1984 Regents' plans for improving the state's primary and secondary schools.

There was little action on the curricular recommendations of the Fleischmann Commission, in part because the Commission did not propose that new monies be brought to the schools; rather, the Commission implied that its recommendations could be enacted by increasing the "productivity" of the system through efficiency measures. The Commission asked for massive change without increasing monies available to education. At the same time, it urged that monies be redistributed among districts, significantly reducing state aid to many districts. It is little wonder that the executive leadership was tentative. Given the poor state of New York's economy and declining federal aid to education, the state focused solely on the formula for aid to local districts, and it moved very slowly indeed. Ten years after the Fleischmann Commission issued its report, its proposals on educational finance were only partly implemented; those regarding curriculum and standards were being proposed once again, although in changed form.

Reforms and Resources

The extent to which resources are specified for school reform affects quite strongly whether local districts change their practices in ways state reformers intend. Even when the state government has strongly and consistently urged specific reforms, local school districts have failed to implement them fully, not because they opposed the reforms, but because the changes they were asked to make entailed large and continuing expenditures. New York State often requested the changes but failed to provide adequate and specifically earmarked funding for their execution. Examples of reforms frustrated by insufficient funding include plans for the introduction of a "practical" curriculum in the rural high school during the second and third decade of the century, the implementation of the National Defense Education Act in the late 1950s and early 1960s and, as discussed earlier, the Fleischmann Commission recommendations.

Participating in a nationwide trend toward a more "practical" high school curriculum, the Rural School Survey of 1922 recommended that rural high schools change their traditional college preparatory curriculum to meet the needs of increasing numbers of students who would not go to college or even finish high school. Specifically, the Survey recommended that agricultural and industrial arts courses be available for all boys and that home economics be not only available but required for all girls. The Survey also recommended that the current concentration on Latin and mathematics be replaced, especially for the non-college bound, with social studies, general science, and other useful subjects. Commissioner Groves wanted rural students to have all the opportunities available to their city counterparts. This would have meant the inclusion of more modern languages and laboratory sciences as well. The new curriculum did not materialize, however, largely because the state did not provide the necessary funding.[26]

The state began its effort to change the rural high school curriculum in 1910 with a law offering to pay two-thirds of the cost of the first teacher and half of the cost of the second teacher for agriculture programs. In 1917, the federal Smith Hughes Act provided additional subsidies for teachers of vocational subjects, including agriculture, industrial arts, and home economics. Because of these special appropriations, by 1921, agriculture was taught in 72 rural high schools and in six separate state agricultural high schools.[27]

While advocates of the new "practical" education were pleased with this initial success, it is significant that in no part of the state did the percentage of rural high schools teaching agriculture exceed 14.5 percent in 1921, and in most areas it was substantially less. The recommendations of the Rural School Survey in 1922, that agriculture should be available to all high school boys who wanted it, made little difference; further growth in the 1920s was slight. Although state and federal subsidies made it possible to hire a well trained male high school level teacher of agriculture for half the cost of the usual female rural elementary school teacher, neither the state nor the federal government subsidized the considerable additional expense of equipment or operating costs. By 1922, the scattering of communities motivated enough to pay these additional costs already had programs. Most rural high schools were in villages, which saw no reason to spend their own money on programs of benefit mainly to non-resident, "open country" students. Hard pressed to pay for existing programs, they had other priorities.[28]

Closely tied to agricultural education, home economics programs also illustrate the important role of adequate outside funding in creating change at the district level. Although home economics was probably a more popular "practical" curricular reform than agriculture, and its potential clientele was larger, the original state aid legislation of 1910 did not subsidize it independently. Early state aided home economics programs had to be housed in agriculture departments, their teachers usually hired as the "second," and less heavily subsidized, teacher. (Agriculture, however, could be taught and subsidized with or without home economics). Because of the state subsidy law, almost all early high school home economics programs were in rural areas; after the state law changed in 1919 to finance home economics independently of agriculture, the number of home economics programs increased both in rural and urban high schools. Still, as late as 1921, there were only 74 state aided departments, 45 of which were still subordinated to agriculture programs. Although home economics programs grew more rapidly than agriculture during the 1920s, the Rural School Survey's recommendation that the subject become mandatory for all girls in rural high schools was not carried out; perhaps ten percent of all girls had access to the program. One reason for the slow growth was the fact that local communities could get subsidies under the Smith Hughes Act only if they offered a "vocational" program, one that took up almost half of a student's academic time. Few girls were interested in such an extensive (and unremunerative) "vocational" home economics program, and even though

subsidies were available for teachers' salaries, few communities were willing to commit themselves to the high equipment and operating costs of such a program.

Home economics and agriculture entered the curriculum of at least some rural high schools because they were partially subsidized by the state and federal governments. Reforms lacking subsidies were implemented even less fully, if at all. Studies of high school curriculum in 1927 showed that although courses taken in social studies had increased, Latin and mathematics were still prominent in student programs. Science, modern languages, and vocational subjects that were expanding in urban high schools were growing slowly if at all in their village counterparts. Despite increased state aid in the 1920s, many rural districts were poor. It was cheaper to teach Latin and Algebra than to hire specially trained modern language teachers or pay for the laboratories, special equipment, and high operating costs of the recommended "modern," or "practical" subjects. No new money was appropriated in the 1920s to finance the desired curricular reform, so little reform took place.[29]

Forty years later another effort to change curriculum, this time initiated by the federal government, was less than successful, also because of inadequate funding. Congress passed the National Defense Education Act (NDEA) in 1957, following the Soviet Union's launching of Sputnik. The legislation proposed to upgrade the teaching of science, mathematics, and foreign languages in the schools and recommended a variety of means to do so—from more laboratory facilities in the schools to more advanced placement classes in targeted subjects, especially science and mathematics. Under the terms of NDEA, the federal government provided funds for local districts to purchase equipment for science, mathematics, and language laboratories. The state was to administer the funds, under broad federal guidelines, and to decide on the validity of local requests. The NDEA also provided matching funds for the states to improve supervisory and related services to the schools.

The New York State Education Department (SED) greeted NDEA with enthusiasm. The state established an Ad Hoc Advisory Council on Science and Technology in 1957 to study mathematics and science programs. Between 1958 and 1963, the state revised curricula in the targeted subjects and developed instructional materials for the new curricula. In addition, SED ran summer

institutes to train teachers to use the new materials and established science and mathematics demonstration centers.[30]

How much effect these efforts had in the state's classrooms is unclear, however. After much prodding of the districts, by 1964 the State Education Department had received and filled requests for 3494 pieces of science equipment, 2241 of mathematics equipment, and 2409 of foreign language equipment. Despite the SED effort, however, close to 25 percent of the districts refused to apply for equipment, stating lack of teachers qualified to use it as the reason.[31]

While the NDEA did place government financed equipment in many classrooms, science, mathematics, and foreign language instruction in those classrooms was not necessarily strengthened. In part this was because the NDEA and the state did not provide districts with funds to hire additional mathematics, science, or foreign language teachers who could provide the upper level instruction the reform hoped for or use the advanced equipment the NDEA had paid for. Close to a third of all the state's science and mathematics teachers remained individuals certified in subjects like physical education, English, and social studies. State sponsored workshops and demonstrations reached only a fraction of these teachers; federal and state funds were too limited.

A 1965 evaluation carried out by SED concluded that while more students were enrolled in science courses (largely because the state had changed requirements for high school graduation), there was little evidence that instruction in mathematics, science, or foreign languages had improved.[32] The infusion of new equipment and materials did not stimulate enough additional expenditures at the local level to carry the proposed reforms to successful completion. Local districts felt that they could not afford to divert monies from basic school subjects to upgrade mathematics, science, or foreign language instruction. In fact, the SED report complained that districts which did re-allocate funds to science and mathematics caused "harm" to instruction in the language arts, civics, and health education. After 1965, the state sought to change NDEA to extend the program to all subjects (except art and music) at the elementary and secondary levels. In short, the state recommended unspecified grants to school districts for general "improvement of instruction."[33]

While the lack of total funding was responsible for the failure of NDEA to significantly improve high school science and mathematics instruction, education has been affected by state mandated programs that districts could implement without additional taxing of local resources. This was the case in the Regents' mandated Basic Competency Testing Program, which was put into operation in 1979. The program specified that a local district could not award high school diplomas unless students passed state administered tests in mathematics, reading, and writing. (Tests in health and civics were optional). The local districts were not required to do anything except withhold degrees from substandard students; the tests were graded as well as administered by the state.[34]

As the 1983 report of the Carnegie Foundation for the Advancement of Teaching indicated, the New York State competency testing program did insure that basic skills were taught.[35] The competency testing program, still in effect in 1984, demonstrates that if the state pays for a program, especially one limited to testing, it can change minimal standards on degrees it controls. Emphasis on minimal competency does not assure "excellence"; it may actually only improve students' test-taking skills.

Reform and Accountability

While the various commissions on education in the 1980s call for many reforms, the history of New York State suggests that the extent to which accountability or evaluation are part of reform may well affect the ways in which reforms are enacted. In New York State, neither accountability nor evaluation at the local district level has been a distinguishing feature of past reform. Until the Elementary and Secondary Education Act of 1965, school districts have rarely been asked to account for programs they have put into effect, their educational standards, or how they allocated monies given them by the localities, the state, or the federal government; nor have districts been required to conduct studies to see if the programs they offer have achieved their intended objectives Reform often has been limited to what districts say they will do to change practices or what the state or federal governments hope they will do. This has been the case whether or not the districts were given funds to bring about change. Schools rarely have reformed practice without strong, consistent impetus to do so from either state or national governments. Often, districts have used state or federal money to pay for services they would normally have provided through locally raised funds. The end

result has been not the improvement of educational services intended by state or federal reformers, but rather local property tax relief and a lessening contribution of localities to the education of their children. Even when money has been spent as the state or federal government intended, absence of evaluation at the local level has made it difficult for either the planners or the executors of the reform to know whether the effort was worthwhile. Decisions to continue or to eliminate the reform, then, are based exclusively on political or budgetary rather than educational factors.

Although education has been considered a state function since 1795, throughout most of New York's history the state has chosen to delegate its responsibility in this area to the local districts. Originally, this choice was a necessity; the state had no machinery to make and enforce educational decisions at the local level in the large and primarily rural area under its jurisdiction. Later, necessity came to be viewed as a virtue and the decision making autonomy of the local district was enshrined as American democracy in action. Early reformers shared this attitude. According to the Rural School Survey of 1922, "that which a citizen learns through operation of his own action becomes firmly established, while that which is forced upon him against his will he opposes more firmly. It is therefore fundamental in state aid that we leave final decision to the local community and leave them to choose what is best."[36]

Ironically, as state aid to education increased during the 1920s, state control over how the money would be spent decreased. In the opening decades of the century state aid came to the districts through a system of individual "quotas," most of which were for a specific purpose such as hiring physical education teachers or purchasing library books, and districts were expected to spend the money for the designated purpose. Each district reported, for example, on its use of the library quota. Since there were only two supervisors to inspect elementary and secondary school libraries all over the state, however, reporting was essentially on the honor system.[37] During the 1920s, non-specific state aid granted to districts solely on the basis of the number of students in attendance became more important than the old "quota" grants, many of which in 1930 were discontinued altogether. While the new system was intended to enable the districts to provide better educational programs without raising local property taxes, or even to allow hard pressed districts to maintain educational services while reducing property

taxes, it was not intended to defray local expenses for programs unrelated to education. The existence of this misuse of state aid to education is reflected in the Friedsam law of 1928, which specifically prohibited "the application of state education funds in any city to the credit of the General Fund for the Reduction of Taxation, notwithstanding any provisions to the contrary contained in the charter of such city."[38]

The power that remained to the states to hold local districts accountable even after the abolition of the quota system was rarely used. State appointed district superintendents in rural areas had the authority to condemn substandard school buildings, but, fearing the displeasure of local taxpayers, used their authority sparingly. The Regents Inquiry of 1937 noted that "literally hundreds" of unsanitary, unsafe, substandard rural schools were still in use.[39] The same report noted that "there is no integrated systematic program for studying and appraising the work of the school."[40] Standardized tests were marked locally and were such unreliable guides to the quality of instruction that both the Rural School Survey and the Regents Inquiry recommended their use be restricted or eliminated, and supervision of teachers by local or state authorities was sporadic and haphazard.[41] Accountability was further hindered by poor accounting systems a the local level. The Rural School Survey found that half the rural districts did not have budgets, and that the reports district supervisors sent to the state were based on "abstracts" sent to them by local officials rather than receipts and other substantial data.[42] Cities had their own supervisory systems, and the district supervisors who represented the state in rural areas were careful not to antagonize local officials and taxpayers, feeling that to exert state power over the local districts would be undemocratic, futile, and counter-productive. In such an atmosphere, it was difficult to tell whether normal operating directives from the state, much less special requests for reform, were being implemented.

An increased demand for accountability and evaluation came with increased federal spending for educational reform in the 1960s, specifically with the Elementary and Secondary Education Act (ESEA) of 1965. The implementation of Title I of this program through SED illustrates the fact that without accountability, even when monies are earmarked for specific purposes, intended reforms are not necessarily made in the local schools. The ESEA asked local districts (perhaps for the first time) not only how they proposed to spend funds granted through the

state, but also how instructional practices and student outcomes changed as a result of the funded programs.[43]

Title I of ESEA provided monies for compensatory education, which would be allocated by state governments for programs to aid children who were from low income homes or at least one year behind grade level in reading, writing, and mathematics. Considerable sums were involved. In 1972, ESEA paid the salaries of 45,426 teachers, aides, and supervisors throughout the state. In 1974-1975, New York's share of ESEA funds amounted to $214,372,281, of which over $190,000,000 went directly to local school districts.[44]

Although responsible for administering and monitoring ESEA projects, the State Education Department seemed reluctant to do more than provide money for any proposals made by the districts. The state defined 99 percent of all districts eligible for ESEA monies, and before 1972 conducted no routine site visitations, nor did the state require local districts to evaluate the impact of the new funds on the targeted populations. The only monitoring was by a mail questionnaire. Only when the federal government required an investigation because of charges of misallocation of funds did the state intervene.

A 1972 report stated bluntly that, while ESEA funds reached 99 percent of the districts in the state, two-thirds of the targeted population remained outside of the funded programs. The reasons given were "political pressure" and "parental objection."[45] Because no accountability had been built into the program, the districts used the funds to hire additional staff to bolster their entire programs rather than have to provide services directly to the children who were identified as in greatest need of services and for whom ESEA monies were intended. The problem lay in the fact that monies were not given to individual schools or individual children within schools, but to the district as a whole. The federal government began to insist on clear cut accounting. Specifically, it wanted to know how ESEA would serve children, not school districts, and whether the programs had any effect on targeted populations. By 1974-1975, with ESEA funds at stake, stricter accountability became part of state practice. Annual reports began to delineate how funded programs were different from programs "not previously occurring in regular classroom activities funded by local and state levy monies."[46] Reports thereafter spoke of students served rather than of the school districts that received monies.

Evaluation as well as accountability became a stronger part of the ESEA program. Under federal pressure, in 1972 and again in 1975, the state sought to find out whether the programs funded were effective. Such data were difficult to generate. Districts did not necessarily turn over test scores to the state and although there seemed to be improvement in the number of students reading at grade level, there was no way to tell, given the nature of district reportage, if this resulted from ESEA funded intervention.[47]

Attempts to build accountability and evaluation into reform in the case of ESEA did help get programs to targeted populations, but not without creating a great deal of enmity on the party of state and local districts toward the federal government in general and ESEA in particular. In its annual recommendations to Washington, Federal Legislation and Education in New York. the State Education Department asserted that the federal government should not set educational priorities. "Elementary and secondary education is the responsibility of the state," SED asserted, and the federal government "should not seek to direct the expenditure of state and local resources."[48] The state insisted that "requirements on state and local agencies have become excessive as related to the proportion of federal assistance available." In 1977 New York State began to ask for block grants from the federal government allocated on a per capita basis (as the local districts had been receiving from the state since 1930), a request to which the Reagan administration after 1980 was inclined to accede.

Lessons from the Past

Our historical survey of reform in New York State suggests that there are lessons from the past that can inform policy-makers of the 1980s as they seek to herald in an era of educational excellence. Our evidence indicates that reforms that are clearly articulated, consistent and within the realm of existing knowledge have a greater likelihood of being implemented than reforms which are not. Past reforms calling for "excellence," "good citizenship," or some other well intentioned but vaguely stated goal, has rarely succeeded; no one has ever quite been sure how to attain such ends. More often than not, broad-ranging, vaguely articulated aims, however admirable, ended up promoting contradictory practices which not only undermined intended goals, but also often subverted pre-existing programs of proven worth.

Reformers of 1983 and 1984 call for greater rigor and more academic and scientific-technological training in the schools. Such reforms, like the NDEA of the 1950s, may make students take more courses; but will such reforms insure that students learn more? Testing programs being urged today, like the Regents' Basic Competency Testing Program in New York State in the 1970s, may insure that more students fail to receive their diplomas, but will they guarantee excellence in education? Such programs may undermine academic standards and promote solely test-taking skills.

New York State's history of educational reform also suggests that it is easier to call upon the schools to teach a set of skills relating to the economy or the general well-being of society than to have the schools actually teach those skills. The Rural School Survey of 1922, which called for "applying the benefits of the science of education" to school management, or the 1937 Regents Inquiry which asked teachers to instruct their students in "good character," both came to naught. A similar fate may await contemporary calls for the schools to prepare students for the world of tomorrow, and for similar reasons. Everyone agrees it would be a good idea for schools to engage in such activities, but it will not be possible for the schools to do so without careful attention to curricular development.

The extent to which current reform efforts acknowledge the role of committed executive leadership will strongly affect the outcome of those efforts. In the past, calls for change that were not accompanied by strong leadership have not affected practice. Without strong leadership and financial resources earmarked for specific purposes, local districts have resisted, ignored and/or subverted the numerous commissions that have laid the onus for reform on their shoulders. In the past, as we have shown, the many calls emanating from the federal government, the state, and the courts for New York State to equalize educational expenditure have had few results. No one has taken responsibility for reform, although countless committees continue to be appointed. Until someone exercises strong executive leadership, inequality will continue to be studied but not redressed. Schools will be as uneven in quality ten years hence as they are today if all the responsibility for reform is placed upon local constituencies. As the NDEA-attempted reforms of the 1950s showed, some localities may prefer to ignore current appeals to change their schools regardless of national and state charges that those schools are at best mediocre and put the nation at risk.

Many of the national reports calling for school reform in the 1980s express a faith that changes in school practice can be made without substantial changes in the amount of money spent on education simply by asking districts or teachers to do more with the same or even less funds. If it was sometimes possible to do this with a limited reform in the past, it is scarcely possible to do so with the extensive changes suggested today. Although costs have risen so rapidly that taxpayers feel overburdened, or the states, barely recovering from recession, perceive themselves unable to afford schools, the demands made upon the schools have increased more than the costs. Schools are asked to provide bilingual education, mainstream the handicapped and offer remedial services to underachievers and enriched programs to the gifted, while at the same time providing "excellence" in the form of more courses in science, mathematics, and technology and more advanced placement courses. Our survey of the history of reform in New York State suggests that schools may be unable to meet these demands without substantial increments of new monies. Otherwise, like the NDEA of the 1950s, programs that have proven benefit run the risk of being undermined so that new, untested ones can be found.

We are struck, in reviewing the many reforms attempted in education in New York State in the twentieth century, with the fact that one reform follows so closely upon the other that the schools seem to be in a perpetual process of being reformed. Yet while many have been willing to reform the schools, few have taken the time or the trouble to evaluate past reforms, or even to see if they have actually been implemented. It is ironic that the memory of educators and politicians is so short. We find reformers in 1984 charging the schools with failure, when they may well have succeeded in large part in reaching some of the goals established within the last two decades. Just ten years ago in New York State the Fleischmann Report maintained that the state's system of education was "excellent," one of the finest in the world, that its standards were the highest, and that its only major blemish was the glaring inequalities in student outcomes. Today the reform efforts of ten years ago, as exemplified by the Fleischmann Commission, have been buried as new criteria are being used to determine whether past practices were adequate. New practices are being put into place without thorough knowledge of what "worked" in the past, who it worked for, or what goals from the past are worth of continued pursuit.

The history of school reform in New York State indicates that reform movements, like those of today, are fraught with contradictions, not because politicians and pedagogues are blind to their inconsistencies, but because major reform efforts have diverse and contradictory sources. Discontent with the schools today, as in the past, is often in reality discontent about something else: crime, the state of the economy, racial unrest, poverty, an unfavorable balance of trade, or the country's position in the Cold War—complex issues on which the schools have little influence but on which the national commissions on excellence nonetheless expect the schools to have a direct and salutory effect. In the past, school reform has been noticeably unsuccessful when it has focused on social, political, and economic issues the schools could not and may never have been able to resolve. On the other hand, when reform has focused on exposing students to specific curricula or requiring minimal academic standards, it has been able to effect change. The reforms of the 1980s may not be able to make the United States technologically superior to Japan, but they may improve upon what schools try to teach students.

When we began our survey of school reform in New York State, we found it difficult to locate statewide school reform until the mid to late 1930s. In the first two decades of the Twentieth Century, efforts to change educational practice were directed to a particular city—like New York City in the case of the Hanus Report—or at a category of schools like the Rural Schools Survey of 1922. In the early years of this Century, the disparities between city and countryside were recognized not only in terms of the populations the schools were called upon to serve, but in the quality and scope of education offered in those schools. Paradoxically, as the population of the state shifted and changed over time, as in the post-World War II period, and the differences grew between New York City and the rest of the state, as well as between the "big five" cities (New York, Buffalo, Rochester, Syracuse, and Yonkers), the tier of wealthy suburbs surrounding New York City, and the rural areas of the state, school reform arising from the federal government as well as New York State failed to acknowledge the very real gaps between the different parts of the state, which earlier reforms had tried to address. The ESEA of 1965 was applied to all parts of the state initially, despite the fact that the targeted population was concentrated in New York, Buffalo, Rochester, and to a lesser extent Syracuse. The various state aid formulas still have not been able to come to grips with the ethnic, racial, and economic diversity

in the state. As we embark on school reform today, it may be that some schools in the state are in need of drastic changes; reforms directed at these schools may well undermine the standards in other schools in a "different" New York. Plans for reform, perhaps, should take into account the fact that there is no one New York State, but rather several, and that this may imply more than a single strategy for improving the quality of education.

Notes

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3. New York State Board of Regents, Proposed Action Plan to Improve Elementary and Secondary Education Results in New York (Albany: State Education Department, 1983); New York State Board of Regents, New Part 100 of the Commissioners' Regulations Re: Regents Action Plan (Albany: State Education Department, July 25, 1984).

4. See U.S. Department of Education, The Nation Responds: Recent Efforts to Improve Education (Washington, DC: U.S. Department of Education, 1984); "The States Consider Incentives for Teachers," Politics of Education Bulletin, Vol. II, Nos, 2 and 3 (Spring 1984), pp. 9, 11.

5. The University of the State of New York, State Education Department, Racial/Ethnic Distribution of Public School Students in New York State, 1966, Table 3, p. 4; 1983, Table 3, p. 4.

6. Report of the Committee on School Inquiry, Board of Estimate and Apportionment, 2 vols. (New York City: 1911-1913), vol. I, Paul Hanus, "The Report as a Whole," pp. 57, 134.

7. The Joint Committee on Rural Schools, George A. Works, chairman, Rural School Survey of New York State: A Report to the Rural School Patrons (Ithaca, NY: 1922), pp. 74-75; Leo J. Brueckner, The Changing Elementary School, The Regents Inquiry (New York: Inor Publishing Company, 1939), p. 64.

8. Report of the Committee on School Inquiry vol. I, op. cit., pp. 18,21, 140, 148.

9. Frank Pierrepont Graves, Report of a Study of New York City Schools, Part II, "Evaluation of Achievement". (Albany, NY: University of the State of New York, Department of Education, 1933); Julius D. Maller, School and Community: The Regents Inquiry (New York: The McGraw-Hill Book Company,Inc., Publishers, 1938), pp. 10, 284, 323-25. For political background of the Graves report, see Sol Cohen, Progressives and Urban School Reform: The Public School Association of New York City 1895-1954 (New York: Teachers College Press, Teachers College of Columbia University, 1964), pp. 154-60.

10. Charles H. Judd, and others, Administration and Supervision, Rural School Survey of New York State (Ithaca, NY: Joint Committee on Rural Schools, 1923), Part IV, "Principles of Organization and Administration," by Franklin Bobbitt, p. 327-28. For a general discussion of the Survey's views on administration and its conflicts with local opinion, see pp. 263-412; see also George A. Works, Rural School Survey of New York State: A Report to the Patrons, op. cit., pp. 257-58.

11. Leo J. Brueckner, The Changing Elementary School, op. cit., pp. 149-51.

12. Board of Estimate and Apportionment. Report of the Committee on School Inquiry, op. cit., pp. 14, 17-18, 57.

13. Ibid. Passim, especially pp. 17-21, 57-60, 64-65, 126-28, 137-42, 156-57. Valuable background on the conflicting views embodied in the Hanus Report can be found in Sol Cohen, Progressives and Urban School Reform, op. cit., and Diane Ravitch, The Great School Wars: New York City 1805-1973 (New York: Basic Books, Inc., Publishers, 1974).

14. This discussion is based on the yearly reports prepared by the State Education Department Bureau of Urban and Community Programs Evaluation, on ESEA, which appeared from 1970 on. See, for example, The University of the State of New York, The State Education Department, Bureau of Urban and Community Programs Evaluation. New York State, 1974-5, ESEA, Title I (Albany: Author, 1975). For local studies, see The University of the State of New York, State Education Department, Office of Programs Analysis and Evaluation, A Study of ESEA Title I in Selected School Districts (Albany,: Author, 1977).

15. The 1974 Supreme Court Decision, Lau vs. Nichols, ruled that school districts are compelled under Title VI of the 1964 Civil Rights Act to provide meaningful education to children whose native tongue was not English. This has been interpreted variously as meaning districts have to provide bilingual education or instruction in English as a second language. In May 1975, the State Education Department reprinted a federal publication written by the

United States Commission on Civil Rights entitled A Better Chance to Learn: Bilingual-Bicultural Education (Clearinghouse Publication No. 51). See also New York State Assembly, Bilingual-Bicultural Education, Preliminary Report of the Sub-committee (Albany: October 1978). The issue of bilingual education had been raised earlier by the Fleischmann Commission. See The Fleischmann Report on the Quality, Cost and Financing of Elementary and Secondary Education in New York State (New York: Viking Press, 1973), Vol. I, pp. 3-52.

16. The many pieces of legislation affecting the mainstreaming of handicapped children, as well as federal and state legislation on bilingual education, are summarized yearly and published by the state. See the yearly Summary of New York Legislation Affecting Education, compiled by the Office of Counsel from 1975 (Albany: State Education Department). For federal legislation and New York State's reactions, see The University of the State of New York, The State Education Department. Federal Legislation and Education in New York State (Albany: Author, annual), especially from 1973 on.

17. The Fleischmann Report, op. cit., 3 Vols. The Fleischmann Commission was critical of the state aid formulas worked out by the Diefendorf Commission of 1962.

18. See New York Court of Appeals, Board of Education Levittown Free School District vs. Ewald Nyquist. 57 NY 2d 27, June 23, 1982.

19. See New York State Task Force on Equity and Excellence in Education, The Search for Equity: Interim Report of the New York State Special Task Force on Equity and Excellence in Education (Albany, February 1982), 3 vols.

20. The following discussion of the fiscal crisis and school aid reforms of the 1920s is based on the following accounts: Harlan Updegraff, Financial Support, The Rural School Survey of New York State (Ithaca, NY, 1922); Goerge D. Strayer and Robert Murray Haig, The Financing of Education in the State of New York, Education Finance Inquiry, Vol. I, under the auspices of the American Council on Education, Washington, DC (New York: Macmillan, 1923); Paul R. Mort, State Support for Public Schools (New York: Teachers College Press, Teachers College, Columbia, 1926); Alonzo G. Grace and G. A. Moe, State Aid and School Costs, The Regents Inquiry (New York: McGraw-Hill, 1938) (which contains a summary of all the state reports relating to school finance from 1920 to 1935); Paul E. Malone, The Fiscal Aspects of State and Local Relationships in New York, Special Report of the New York State Tax Commission, no. 13 (Albany, 1937); and Rose Naomi Cohen, The Financial Control of Education in the Consolidated City of New York, Teachers College Columbia University, Special Contributions to Education #943 (New York: Teachers College Press, 1948).

21. Alonzo Grace and G. A. Moe, State Aid and School Costs, op. cit., pp. 45-46.

22. For amounts of aid, see Rose Naomi Cohen, The Financial Control of Education, op. cit., pp. 162, 173; for percentages, see Paul E. Malone, The Fiscal Aspects of State and Local Relationships in New York, op. cit., pp. 204, 234.

23. Alfred E. Smith, Up to Now: An Autobiography (New York: The Viking Press, 1929), p. 276. On Smith's attitudes and public actions relating to education, see pp. 202-05, 276-79; on his financial policies, see pp.334-53. See also David M. Ellis, James A. Frost, Harold C. Syrett, and Harry J. Carman, A History of New York State (Ithaca, NY: New York State Historical Association and Cornell University Press, 1967), pp. 393-406.

24. The Fleischmann Report, op. cit., Vol. I, pp. 53-208; for recommendations on the curriculum, see Vol. II, pp. 3-58; 59-101.

25. See, for example, Richard N. Boisvert, "The Impact of School Financing Reform on New York State Taxpayers" (Albany, 1973); New York State, Special Task Force on Equity and Excellence in Education, An Interim Report, September 1980; New York State Task Force on Aid to Education, Report to Governor Hugh Carey (Albany, January 1981); Charles W. deSeve, Who Bears the Cost of New York's Schools? Measuring the Tax Burden: Report Prepared for the New York State Task Force on Equity and Excellence in Education (Albany, 1980): The Report and Recommendations of the New York State Special Task Force on Equity and Excellence in Education, February 1982, 3 vols.

26. Emery Ferris, The Rural High School, Rural School Survey of New York State (Ithaca, NY, 1922), especially pp. 47-51, 178-83; Theodore H. Eaton, Vocational Education, The Rural School Survey of New York State (Ithaca, NY, 1922), pp. 266-71.

27. Easton, Ibid., p. 64. For the history of state and federal aid to agricultural and home economics programs see pp. 13-25. See also University of the State of New York, State Education Department, New York State Education Department 1900-1965 (Albany, 1967), pp. 22-24.

28. Ibid., pp. 64-70.

29. Wayne W. Soper and Warren W. Coxe, Trends in Secondary Education, University of the State of New York Bulleting #961 (December 1, 1930), pp. 44-46; Thomas C. Norton, Education for Work, The Regents Inquiry (New York: McGraw-Hill, 1938), pp. 51-52.

30. This discussion of the NDEA is based in part on the following sources: The University of the State of New York, State Education Department, Regents' Program for Meeting Needs in Science, Technology and Education of the Talented (Albany: Author, 1958); The University of the State of New York, The State Education Department, Bureau of Department Programs Evaluation, National Defense Education Act, Title III: An Evaluation of the Program in New York State (Albany: Author, 1965); New York State, Education Department, Annual Narrative Report on Programs for Strengthening Instruction in the Critical Subjects—Science, Mathematics,History, Civics, Geography, Modern Foreign Languages, English and Reading for fiscal Year 1965 (Albany: Author, 1966).

31. NDEA, Title III Evaluation, op. cit. (1965), p. 22.

32. Ibid., see also Annual Narrative Report on Programs for Strengthening Instruction in Critical Subjects. op. cit., pp. II-2 - II-10, III-4.

33. Ibid.

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35. See Boyer, op. cit., Chapter 1.

36. George A. Works, Rural School Survey: A Report to the Rural School Patrons, op. cit., pp. 239-40. An excellen summary of the legislative and judicial basis for the state's primary responsibility for education is found in Rose Naomi Cohen, The Financial Control of Education, op. cit., Chapter V, pp. 142-60.

37. Charles H. Judd, Administration and Supervison, op. cit., p. 205; Leo Brueckner, The Changing Elementary School, op. cit., p. 188.

38. Rose Naomi Cohen, The Financial Control of Education, op. cit., p. 174. For a summary of the quota system 1920-1930 see Alonzo G. Grace and G. A. Moe, State Aid and School Costs, op. cit., pp. 36-39.

39. Leo Brueckner, The Changing Elementary School, op. cit., p. 181. See also Julian E. Butterworth, School Buildings and Grounds, Rural School Survey of New York State (Ithaca, 1922), p. 124, and Charles H. Judd, Administration and Supervision, op. cit., p. 175.

40. Leo B. Brueckner, The Changing Elementary School, op. cit., p. 217.

41. On supervision, see Ibid., p. 259; Charles H. Judd, Administration and Supervision, pp. 191-204; Alonzo G. Grace and G. A. Moe, State Aid and School Costs, op. cit., p. 91. On examinations, see Paul J. Kruse, "The State System of Examinations," in Judd, Administration and Supervision, pp. 414-542.

42. George A. Works, Rural School Survey of New York: A Report to the Patrons, op. cit., pp. 219-20; Charles H. Judd, Administration and Supervision, p. 184. In both these volumes the tension between the attempt of the state to enforce minimal standards and the strong tradition of local autonomy is a recurring theme. State curriculum requirements for elementary schools are summarized in Leo Brueckner, The Changing Elementary School. op. cit., pp. 100-01.

43. This discussion of Title I of the ESEA is based on the yearly reports prepared by the State Education Department, Bureau of Urban and Community Programs Evaluation, New York State, ESEA, Title I, issued between 1970 and 1978.

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45. Evaluation 1971-2, Achievement, ESEA, Title I, op. cit., p. xiii.

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47. See especially The University of the State of New York, State Education Department. Evaluation, Elementary and Secondary Education, A Report to the Governor and Members of the Legislature Prepared Pursuant to Secion 3602 of the Education Law (Albany: Author, March 1974), especially pp. 5, 8. See also The University of the State of New York, State Education Department, Office of Programs Analysis and Evaluation, A Study of ESEA Title I in Seclected School Districts (Albany: Author, 1977).

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